Toxic Release Inventory "As Is" Business Process Analysis for Compliance Reporting

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Executive Summary

The U.S. Environmental Protection Agency (EPA) is implementing electronic reporting technologies, which include Web forms, electronic data interchange, and other electronic commerce technologies in reinventing information management systems. To enable and promote data standards and electronic reporting, the agency is developing the central receiving (CR) facility. The CR facility is "a central point which supplements EPA reporting systems by performing new and existing functions for receiving legally acceptable data in various formats (e.g., electronic, paper, diskette), including consolidated/integrated data."

To develop a viable "to be" CR design, the EPA is identifying and documenting current functional requirements of five compliance reporting programs: Public Water Supervision System, Aerometric Information Retrieval System and National Emissions Trends Database, National Pollutant Discharge Elimination System, and Toxic Release Inventory (TRI) System. The analysis of the five programs will serve as a baseline of current operations and procedures to develop the CR functional requirements. This report comprises the TRI portion of the requirements.

This report documents current functional requirements and business processes of the TRI reporting program. Section 313 of the Emergency Planning and Community Right-To-Know Act requires that the EPA maintain an inventory of annual toxic emissions and releases and make that inventory available to the public. To meet the requirements, the EPA and states annually collect TRI information from facilities. EPA is required to maintain this information in a national TRI database.

The Logistics Management Institute conducted a business process analysis of the "as is" data flow process for the TRI program. The TRI program consists of four primary stakeholders—facility, state, region, and federal. The core and support functions for each stakeholder were identified and documented in data process flows, functional activities, procedural steps, and business processes. Reporting facilities, states, and federal have the following core and support functions:

- *Program management* consists of TRI activities for managing and over-seeing all operational and administrative activities.

- *Mail receipt* consists of applying a date stamp when a submission is received and sorting, identifying, and labeling it. Mail receipt for reporting facilities involves routing TRI information received by mail or the Internet to staff who prepare submissions.

- *Data capture* consists of capturing data from paper Forms R and A submissions and revisions, miscellaneous documents, withdrawal requests, magnetic media submissions, and trade secret submissions. Data capture for reporting facilities includes data collection and initial calculations for determining compliance reporting and preparing submissions.

- *Data reconciliation* consists of reviewing, identifying, and reconciling inconsistencies and errors in TRI data.

- *Data archive* involves storing physical and electronic submissions and tracking submissions during data processing.

- *Data distribution* involves releasing TRI data to states, EPA regions, other government agencies, and the public, and sending notices to submitters for confirming submission data and correcting problems and data errors. Data distribution for reporting facilities includes submitting completed reports and distributing data within their organizations and to the public.

- *Information system* supports the system that receives, processes, and stores data, and serves as a tool to collect, organize, and provide timely access to TRI data.

- *Compliance and enforcement* include the activities to ensure releases, transfers, waste management practices, and pollution prevention activities for toxic chemicals are reported. Reporting facilities provide information for compliance reviews and inspections, and address enforcement actions.

EPA regions do not process TRI reports. Their core functions include providing access to TRI data, providing compliance assistance and outreach, performing compliance reviews, and assisting in conducting inspections and taking enforcement actions.

The TRI program is an example of a non-delegated reporting program where facilities report directly to the EPA and states where the facilities are located. In 1997, more than 96,000 forms (nearly 83,000 Form R and more than 13,000 Form A reports) were submitted to and processed by the EPA. Approximately 60 percent of the submissions were on magnetic media, and 40 percent were a paper form. The functionality and capability of EPA and state TRI programs as well as programs of reporting facilities identify functional requirements essential for building a viable “to be” CR model.

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Part I
Introduction

The chapters in Part I provide introductory and background information for the report. Chapter 1 presents the purpose and provides background on EPA's electronic compliance reporting initiatives and development of a central receiving (CR) facility to manage reporting transactions centrally. This chapter also presents an overview of the non-delegated TRI reporting program and the methodology used in this business process analysis. Chapter 2 provides a high-level overview of the key stakeholders and their functions as part of the TRI reporting process.

Chapter 1
Purpose and Background

The U.S. Environmental Protection Agency (EPA) is seeking to improve operating procedures and reduce the burden of compliance reporting on the regulated community. The EPA's Reinventing Environmental Information initiative sets the agency's direction to support electronic compliance reporting from the regulated community. This initiative was reaffirmed by the Government Paperwork Elimination Act that requires federal agencies to support paperless reporting options by 2003.

The EPA is implementing electronic compliance reporting mechanisms that include Web forms, electronic data interchange (EDI), and other electronic commerce (EC) technologies to streamline reporting. To provide consistent, central management of reporting transactions, the agency is developing a CR facility. EPA defines a CR facility as "a central point which supplements EPA reporting systems by performing new and existing functions for receiving legally acceptable data in various formats (e.g., electronic, paper, diskette), including consolidated/integrated data."[1] A CR facility will provide a consistent and convenient One-Stop approach for compliance reporting. It will also assist the EPA in avoiding redundant and diverse investments in costly EC technology and infrastructure to support electronic reporting.

To develop a viable "to be" CR design, the EPA is identifying and documenting current functional requirements. Because evaluating all EPA programs would be prohibitive in terms of time and cost, the following representative programs were selected:

- *Full delegation*. The Aerometric Information Retrieval System (AIRS) and National Emissions Trends (NET) reporting typify entirely delegated programs where virtually all data are received indirectly through the delegated states.

- *Partial delegation.* The Public Water Supervision System is also a very complex and high-volume reporting process with states, localities, public water suppliers and testing laboratories involved in the reporting.

- *Mixed delegation*. The National Pollutant Discharge Elimination System (NPDES) typifies a mixed non-delegated and delegated program. Facilities submit reports directly to states and EPA regional offices. The reporting process is also complex and has a high volume.

[1] Environmental Protection Agency, *Central Receiving, A New Paradigm of Environmental Reporting*, brochure, 1999.

- *Non-delegated.* The Toxic Release Inventory (TRI) System typifies a non-delegated program with direct reporting from facilities to the EPA. Facilities submit two reports—Form A or Form R—directly to the EPA, states, and territories on paper and magnetic media.

The information about these five programs will be used in developing a requirements document and shared with other programs to determine the final functional requirements for the CR design. This report comprises the TRI portion of the requirements.

PURPOSE

The EPA tasked the Logistics Management Institute (LMI) to identify and document the "as is" data process flow and metrics for the TRI reporting program. As part of this effort LMI analyzed the core TRI functions. This report identifies and documents the "as is" data process flow for TRI reports submitted by facilities to the EPA. The EPA will use this "as is" information in designing and implementing the CR facility for electronic reporting. We will describe an analysis of future electronic reporting options for all four "as is" reporting models in another report.

TRI REPORTING

TRI reporting is required by Title III of the Superfund Amendments and Reauthorization Act, also known as the Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA). Facilities that manufacture, process, or otherwise use any of the more than 600 specified toxic chemicals are required to report annually the amounts of the chemicals released directly into the air, water, or land, and transfers to off-site facilities for treatment or disposal. The Pollution Prevention Act (PPA) of 1990 added reporting requirements for pollution prevention activities to Form R for reports beginning in calendar year 1991. Form A was implemented in 1995 as an abbreviated substitute for Form R and is used for an alternate reporting threshold for facilities with low amounts of toxic chemicals. Section 313 requires the EPA to maintain an inventory of annual toxic emissions reports (known as 313 submissions) and make the inventory available to the public.

The TRI reporting process is an example of a reporting system in which facilities submit reports directly to the EPA and appropriate state agencies. Facilities complete TRI Forms R or A and submit them by July 1 annually to the EPCRA Reporting Center in Arlington, VA. Annually, the EPA releases the reported TRI information to state agencies and the public, approximately 9 months after the reporting deadline.

TRI reporting began in 1987 with paper submissions. In 1991, the EPCRA Reporting Center began to accept electronic (magnetic media) submissions on diskette. In 1997, more than 96,000 forms—nearly 83,000 Form R and more than

13,000 Form A submissions—were received and processed by the center. Approximately 60 percent of the submissions were on magnetic media, and 40 percent were on paper form.[2] The EPA is developing a modern automated system for receiving, processing, and storing TRI submissions.

METHODOLOGY

LMI completed a business process analysis examining the "as is" TRI reporting process and developed process flow charts that identify functional steps for each core TRI function for each key stakeholder in the reporting process. We also examined other functions that support the TRI reporting process as part of the business process analysis.

The following sources were used for collecting information on the core functions in the TRI process:

- *Written documentation*. Procedure manuals, specifications, process flowcharts, system reports, system outputs, and other system documentation were used to develop a conceptual understanding of the TRI process.

- *Interviews*.[3] An extensive series of interviews were conducted with TRI data processing personnel at the EPCRA Reporting Center. Three sets of questionnaires were developed—one set for managers, a second set for staff dealing in paper-based TRI processes, and a third set for staff dealing in magnetic media processes. In addition, interviews were conducted by telephone and e-mail with TRI staff at reporting facilities, state TRI program staff, and EPA region TRI coordinators and enforcement staff.

- *TRIM system demonstration.* The EPCRA Reporting Center was phasing in the modern TRI system known as the TRIM system (it will replace the legacy TRI System [TRIS] when it is fully operational). The TRIM system tracks, processes, and stores TRI submission as well as generates TRI outputs. Previews of available TRIM modules during the acceptance testing of the system complemented the interviews.

- *Workshop and questionnaire.* Information was collected from selected facility, state, and EPA regional TRI representatives during the EPA Toxic Release Inventory "As Is" and "To Be" Workshop that was held

[2] Environmental Protection Agency, *EPCRA Reporting Center Annual Report*, April 1, 1998 through March 31, 1999, and interview and documentation provided by EPCRA Reporting Center on June 8, 1999. Higher percentages of magnetic media are cited in other TRI publications, such as the 1999 Information Collection Request (ICR) Amendment (EPA #1363.07).

[3] Much of the analysis is based on the interviews. LMI relied very little on the documentation because the EPCRA Reporting Center's information system was developing rapidly and documentation of the system is not current.

August 31, 1999. Additional information was collected from workshop participants using questionnaires.

- *State survey*. We used information from the results of the National Conference of State Legislatures' *1998 Toxic Release Inventory Assessment* to determine how TRI is used in states and territories.

REPORT ORGANIZATION

This report is divided into five parts—four parts (Parts II through V) describe a specific stakeholder's role in the TRI program. The parts are Part I, Introduction; Part II, Facility; Part III, State; Part IV, Region; and Part V, Federal. Although the regions do not directly process Form R and A submissions, they play an important role in the overall TRI reporting process. The TRI process for the region involves providing data access, providing compliance assistance and outreach, performing compliance reviews, conducting inspections, and taking enforcement actions. Because the functional processing chapters presented for the other stakeholders are not applicable, they are not presented for the region. For each of the facility, state, and federal stakeholders, their TRI process is presented in the following functions.

- *Chapter 1, Process Overview*. This chapter identifies the core and supporting functions of the TRI system and provides an overview of the TRI data process flow.

- *Chapter 2, Program Management*. The TRI program management manages and oversees all TRI operational and administrative activities. The program management integrates policy and data processing aspects of the TRI program.

- *Chapter 3, Mail Receipt Function*. The mail receipt function prepares mail pieces for data processing and submission tracking throughout the data processing phases and data archive. For reporting facilities, the mail receipt function routes TRI-related information via mail or downloaded from the Internet to staff who prepare Form R or A reports.

- *Chapter 4, Data Capture Function*. The data capture function consists of rapid data entry of "as submitted" facility and chemical information into the TRI database. Inconsistencies, potential duplicates, omissions, and errors are flagged for verification and validation during data reconciliation. For reporting facilities, the data capture function includes data collection and initial calculation for preparing the Form R and A reports.

- *Chapter 5, Data Reconciliation Function*. The data reconciliation function is a review and reconciliation of TRI data. The goal of data reconciliation is to eliminate duplication, resolve discrepancies and inconsistencies, and

eliminate errors. Paper (including sanitized trade secrets) and magnetic media submission records undergo the same reconciliation process.

- *Chapter 6, Data Archive*. The data archive function retains original submissions from 1987 to the current reporting year. In addition, reporting facilities retain copies of completed forms and records for at least 3 years from the date of submission.

- *Chapter 7, Data Distribution*. Data distribution consists of releasing submission data to interested parties and the public. The data are released using several mechanisms that include annual data release reports, responses to information requests, and posting to Web sites, such as *Envirofacts*, a data warehouse available for public and private use. For reporting facilities, data distribution includes submitting the completed Form R or A reports, distributing TRI data internally and to the public, and sending supplier notification to customers.

- *Chapter 8, Information System.* The TRI information system function supports data processing and submission tracking and storage. It also serves as an information management tool to collect, organize, and report TRI data.

- *Chapter 9, Compliance and Enforcement*. The purpose of the compliance and enforcement function is to ensure that facilities that meet EPCRA Section 313 requirements accurately report releases and transfers of toxic chemicals. Federal compliance programs also include assistance and outreach to promote compliance through voluntary reporting. Reporting facilities provide information to regulatory authorities for compliance reviews and inspections, maintain documentation, and address enforcement actions.

- *Appendices*. The appendices provide supplemental information for chapters in the parts.

Chapter 2
Summary of TRI Stakeholders

TRI STAKEHOLDERS

This chapter provides an overview of the key stakeholders in the TRI reporting process. The functional process activities for each stakeholder are described in Parts II, III, IV, and V.

The TRI is developed and maintained based on the efforts of the following stakeholders: reporting facilities, state TRI programs, EPA regions, and federal (i.e., EPA headquarters).[1] TRI data are widely used by the public; the media; other EPA program offices; state, local, and tribal governments; environmental and industry advocacy groups; researchers; and the business community. presents an overview of the information exchange and transactions among the stakeholders in the TRI reporting program.

- *Reporting facilities* submit Form R or A reports to the EPCRA Reporting Center and the state where they are located. They receive a facility data profile from the EPCRA Reporting Center to confirm submission information and identify submission errors for resolution. They may also receive a report or notices from the state TRI program for confirming and reconciling submission data. The state TRI program and EPA regional office may contact the reporting facility if it is being targeted for an inspection or is subject to enforcement action.

- *State TRI programs* receive, process, and store Form R and A reports from reporting facilities; verify submission data with EPA; provide compliance assistance and outreach material to reporting facilities; and provide data access and respond to information requests by the public and other interested parties. Some state programs have an active compliance and enforcement program and work with the EPA regional office on compliance reviews and enforcement actions. State programs review the state data extract provided by the EPCRA Reporting Center to ensure that they received the same data.

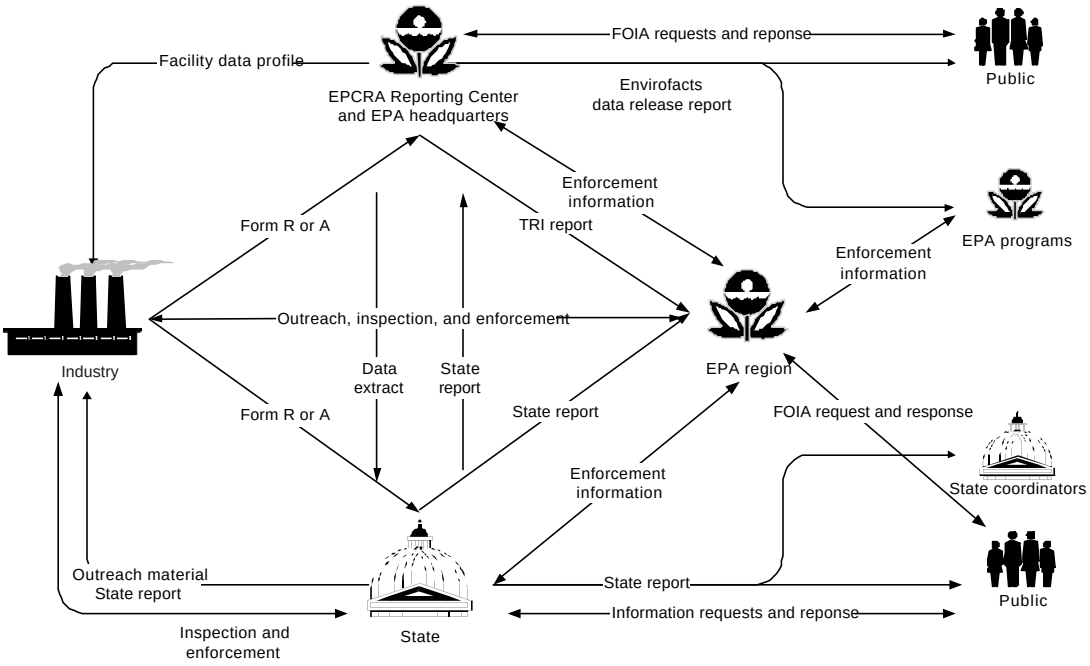
- *Regional TRI programs* have limited but unique role in the TRI program. TRI coordinators do not process forms. TRI coordinators work with reporting facilities in their region by providing training, outreach, and technical assistance. Enforcement staff typically target facilities for

[1] In addition to the 50 states, 3 territories receive TRI submissions. The territories are Puerto Rico, Virgin Islands, and District of Columbia.

inspections, conduct inspections, and take enforcement actions to ensure timely, accurate reporting by facilities subject to TRI requirements. They also respond to Freedom of Information Act (FOIA) requests.

- *Federal TRI program* receives, processes, and stores Form R and A reports submitted by reporting facilities; compiles the TRI data in a national database; and makes the TRI available to reporting facilities, other EPA offices, and the public and government agencies. They also respond to FOIA requests and provide enforcement-related information when requested by the Office of Enforcement and Compliance Assurance (OECA). In data processing and reconciliation of reported TRI data, the EPCRA Reporting Center sends a data profile to the reporting facilities to confirm submission information and identify submission errors for resolution. In addition, the EPCRA Reporting Center sends a state data extract to ensure that the states received the same data.

Figure I-2-1. TRI Stakeholder Exchanges and Transactions



The following sections provide an overview of the functional activities for each of these stakeholders.

FACILITY

Reporting facilities submit Form R or A reports to the EPCRA Reporting Center and to the state TRI program where the facilities are located. The interaction in the reporting process that facilities have with EPA and state TRI programs is

depicted in Figure I-2-1. The primary functions of the facilities in the TRI reporting program include:

- *Program management*. Program management involves administering and overseeing the TRI reporting program (but not the administration of individual functions).

- *Mail receipt.* The mail receipt function receives (via mail or the Internet) and routes TRI-related information (including the latest version of Automated TRI Reporting Software [ATRS], reporting instructions, notices, and correspondence) to prepare Form R or A reports.

- *Data capture.* The data capture function consists of three primary activities:

  - *Data collection.* Data are collected from in-house facility databases, facility reports, and printed copies of other data. Facilities collect data by various scenarios that range from *decentralized* collection where each facility collects data to *centralized* collection where data from each facility are collected at a central location. The reporting data are entered in an in-house database or filing system for the facilities that do not have a database.

  - *Chemical calculations.* Initial calculations are made to determine the reporting thresholds, and additional calculations are made for completing the TRI Form R or A reports.

  - *Form preparation.* Form R or A reports are prepared for submission and mailed using a variety of systems, such as completing the form and generating the certification cover letter using a database, using ATRS or in-house software, or manually completing the form and signing the certification statement.

- *Data reconciliation*. TRI data that have been captured are read from the database, reviewed, and reconciled to verify and validate that the data collected are correct, and to identify any discrepancies, omissions, and errors. Error notices and data profiles received from states and the EPCRA Reporting Center are used to reconcile data errors.

- *Data archive*. Facilities retain copies of completed forms and records used to fill out the forms for at least 3 years from the date of submission. Data archive includes tracking, storing and archiving, retrieving, and searching TRI reports and associated documentation. Archive systems may include central files or an internal database.

- *Data distribution*. Data distribution includes submitting the completed Form R or A reports to the EPCRA Reporting Center and states where the facilities are located, responding to state and EPA data requests, and

distributing TRI data internally and to the public and other interested parties that request this information. Data distribution also includes supplier notification to customers for products that contain reportable substances.

- *Information system.* The facility information system ranges from no information system to personal computer (PC) databases using UTIL or spreadsheets, to fully integrated management systems for large complex facilities.[2]

- *Compliance and enforcement*. Compliance and enforcement activities include providing additional information to regulatory authorities for compliance reviews and inspections (response to notices is conducted as part of data distribution), preparing for audits, maintaining detailed documentation, and addressing enforcement actions taken by EPA and states.

STATE

EPCRA requires reporting facilities to submit copies of reports to the states where the facilities are located as well as to the EPCRA Reporting Center. Every state has a designated person to coordinate TRI activities. The interaction in the reporting process that state TRI coordinators have with TRI stakeholders is also depicted in Figure I-2-1. The primary functions of the state TRI programs in the TRI reporting program include the following:

- *Program management* consists of administering and overseeing the TRI reporting program and coordinating with the EPA regional coordinator and enforcement staff, and the EPCRA Reporting Center.

- *Mail receipt* consists of receiving, opening, stamping, and sorting submissions in the mailroom and routing the submissions to TRI staff.

- *Data capture* consists of capturing data on paper submissions and magnetic media submissions, if accepted by the state, in a state database.

- *Data reconciliation* involves reviewing, confirming, and reconciling submission data. State TRI coordinators review data runs or extracts from the EPCRA Reporting Center to verify that both the state and federal government received the same data.

- *Data archive* involves archiving paper and magnetic media submissions (if accepted) and tracking each document using a unique identifier (e.g., file or report number).

- *Data distribution* involves releasing TRI data to the public, other state TRI coordinators and agencies, EPA regional coordinators, and the

[2] UTIL is a software program prepared by the EPCRA Reporting Center for creating a master database of submissions received on diskette.

EPCRA Reporting Center via a state report and responses to information requests.

- *Information system* consists of developing, testing, maintaining, and supporting the state TRI database and the UTIL or state software for generating the database.

- *Compliance and enforcement* consists of compliance assistance and outreach, compliance review, compliance inspections, and enforcement actions where warranted.[3] Some state TRI coordinators also work with the EPA regional coordinator and enforcement staff on compliance reviews, inspections, and enforcement actions.

REGION

The interaction of EPA regional coordinators with reporting facilities, state TRI programs, and the federal TRI program is also depicted in Figure I-2-1. Although the TRI coordinators and enforcement staff in the 10 EPA regions are not directly involved in processing TRI submissions, they provide the following key program functions:

- *Data access.* EPA regional coordinators also assist individuals, public interest groups, the media, and others in accessing and understanding TRI data. FOIA requests are also processed.

- *Compliance assistance in reporting.* EPA regional coordinators often work closely with reporting facilities in their region by providing instructions and guidance, training, outreach, and assistance in completing forms to ensure timely, accurate reporting by manufacturers or users.

- *Compliance review.* EPA regional coordinators and enforcement staff review the facility list provided by the EPCRA Reporting Center or states in their region, and compare the facilities listed with industrial directories to identify nonreporting facilities. Some regional coordinators and enforcement staff review chemical submissions to identify reporting discrepancies.

- *Inspections and enforcement*. EPA regional coordinators and enforcement staff conduct inspections and take enforcement actions in the region. They also assist states and the EPA in identifying potential compliance violations (e.g., failure to report, inaccurate reporting) and provide support during enforcement actions for EPA headquarters and other EPA program offices.

[3] Most state TRI programs (28 states) do not conduct inspections. Only 13 states have enforcement authority under state law. Very few states have enforcement cases; most compliance issues are addressed with contacts made by the state TRI coordinator.

FEDERAL

EPCRA also requires reporting facilities to submit copies of reports to the EPCRA Reporting Center. The interaction of the federal TRI program with the other stakeholders is also depicted in Figure I-2-1. The primary functions of the EPCRA Reporting Center in TRI reporting include the following:

- *Program management* consists of managing and overseeing all EPCRA Reporting Center operation and administrative activities for processing TRI submissions and making the TRI data available.

- *Mail receipt* consists of stamping (postmark and date of receipt) and identifying, sorting, and labeling submissions with barcodes for tracking.

- *Data capture* consists of capturing data from paper Forms R and A submissions and miscellaneous documents, including withdrawal requests, magnetic media submissions, and trade secret submissions.

- *Data reconciliation* involves confirming and reconciling submission data and verifying keyed data.

- *Data archive* involves storing paper and magnetic media submissions and tracking each submission and document using a unique file number. The number identifies the document type, submission year, and distinct chemical number (DCN).

- *Data distribution* involves releasing TRI data to the EPA and states via the EPA intranet site; releasing data to the public via EPA's Internet site, the Right-to-Know Network (RTK NET), and Government Printing Office (GPO); sending notices to submitters for confirming submission data and correcting problems and data errors; and sending out instructions and the latest version of ATRS.

- *Information system* involves developing and supporting the ATRS, the UTIL software, the TRIM system hardware and software, and other support activities related to information systems (e.g., hotline, training, procedures).

- *Compliance and enforcement* involves the activities of monitoring and ensuring that the reporting community is meeting the TRI reporting requirements. EPA provides materials to assist facilities in complying with EPCRA Section 313 that include reporting, technical guidance, and specific industry guidance documents.

Part II
Facility

More than 25,000 facilities complete and submit compliance reports to the EPCRA Reporting Center.[1] Facilities use a variety of processes to collect information, and complete and submit Form R and A reports.

The chapters in Part II describe the general reporting process for regulated facilities. In addition, reporting scenarios, mechanisms, and processing functions are discussed for the broad range of reporting facilities. The sources of most of the information presented in the following chapters include a TRI workshop,[2] interviews, and questionnaires of facility TRI contacts. Information from the 1999 Information Collection Request (ICR) Amendment[3] is used to compare against the documented facility activities.

[1] U.S. Environmental Protection Agency, *1997 Toxic Release Inventory Public Release Report*, undated.

[2] EPA Toxic Release Inventory "As-Is" and "To-Be" Workshop, August 31, 1999.

[3] U.S. Environmental Protection Agency, *Toxic Chemical Release Reporting, Recordkeeping, Supplier Notification and Petitions Under Section 313 of the Emergency Planning & Community Right-to-Know Act (EPCRA), Information Collection Request Amendment Supporting Statement*, EPA #1363.07, June 23, 1999.

Chapter 1
Facility Process Overview

This chapter provides an overview of the process that many reporting facilities use in preparing and reporting TRI Form R and A reports. The general reporting process is highlighted in Figure II-1-1. Reporting facilities initially collect TRI information from their component areas to determine if they need to report under Section 313 of EPCRA (from facility reports and data from in-house databases or files). Depending on the size of the facility, data are collected on (1) the toxic chemicals manufactured, processed, or otherwise used; (2) Standard Industrial Classification (SIC) codes; and (3) number of full time employees to determine whether a facility must report. In many cases, facilities may not be required to report (e.g., facilities that do not manufacture, process, or otherwise use toxic chemicals). EPA estimates that approximately 200,029 facilities make the TRI compliance determination and approximately 25,159 facilities make a compliance determination, perform TRI calculations, complete and submit Forms R, and retain records.[1]

The functional activities in the TRI reporting process for facilities include the following:

- *Program management*. Program management involves administering and overseeing the TRI reporting program (but not the administration of individual functions).

- *Mail receipt.* TRI-related information (including the latest version of ATRS, reporting instructions, notices, and correspondence) received in the mail is routed to staff who compile and reconcile reporting information and prepare Form R and A reports (the same information is provided on EPA's TRI Internet site).

- *Data capture.* Data are initially collected from in-house facility databases and facility reports and printed copies of other data. Initial calculations are made to determine the reporting thresholds, and additional calculations are made for completing the TRI Form R and A reports. Facilities collect data using various scenarios that range from *decentralized* collection where each facility collects data and performs calculations independently, to *centralized* collection where data from each facility are collected and reviewed, and calculations are performed. The reporting data are captured in

[1] U.S. Environmental Protection Agency, *Toxic Chemical Release Reporting, Recordkeeping, Supplier Notification and Petitions Under Section 313 of the Emergency Planning & Community Right-to-Know Act (EPCRA), Information Collection Request Amendment Supporting Statement*, EPA#1363.07, June 23, 1999.

an in-house database (or filing system for facilities that do not have a database).

The reports are prepared for submission and mailed using a variety of systems, such as completing the form and generating the certification cover letter using a database, using ATRS or in-house software, or manually completing the form and signing the certification statement. Typically the facility manager signs the certification cover letter.

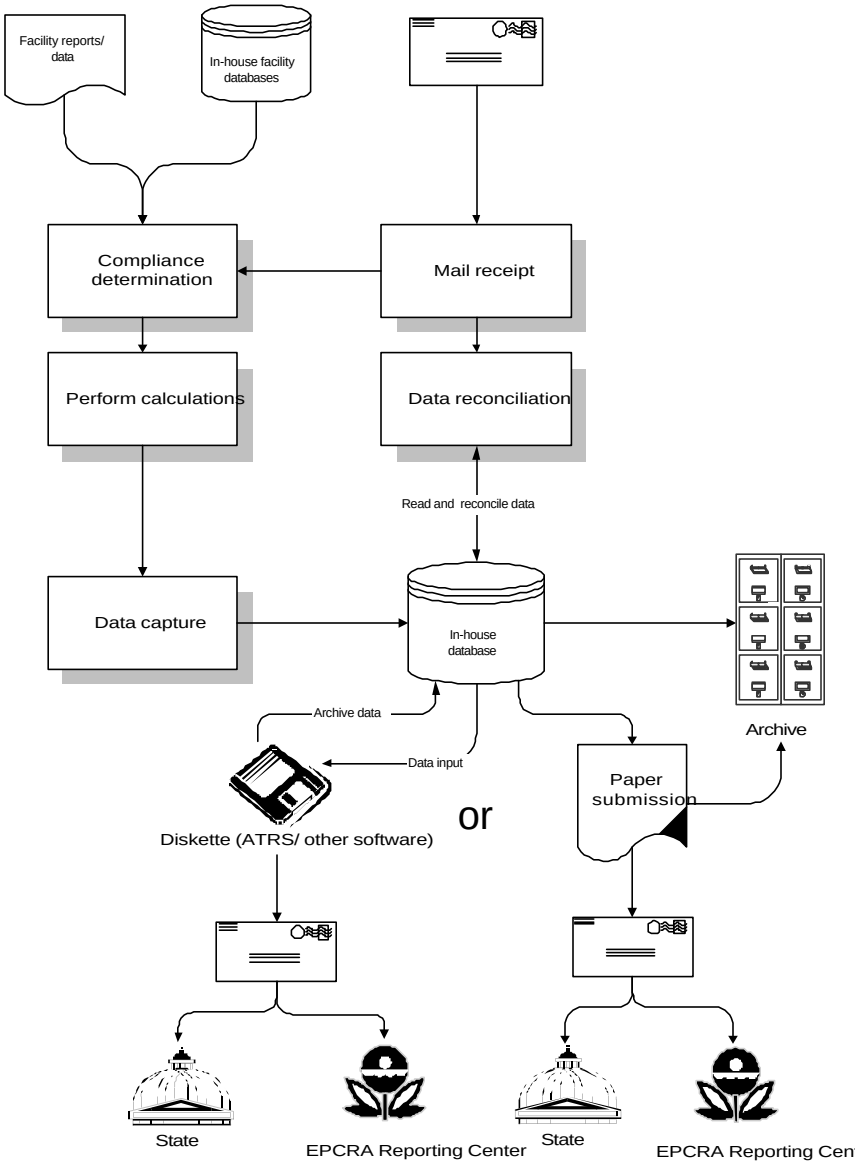
- *Data reconciliation*. TRI data that have been captured are read from the database, reviewed, and reconciled to verify and validate that the data collected are correct, and to identify any discrepancies, omissions, and errors. Identifying and reconciling errors typically involve contacting the individual or department who provided the reporting data to resolve discrepancies. Error notices, instructions, and guidance received from states and the EPCRA Reporting Center are received via the mail and used to reconcile data errors.

- *Data archiving*. Facilities retain copies of completed forms and records used to fill out the forms for at least 3 years from the date of submission. Record-keeping allows a facility to use the information in making calculations in subsequent years and as documentation in the event of a compliance audit or inspection. Depending primarily on the size of the facility, the type of activity, and number of Section 313 chemicals manufactured, processed, or otherwise used, record-keeping systems may include central files or an internal database.

- *Data distribution*. Facilities mail paper or magnetic media submissions to the EPCRA Reporting Center and states where the facilities are located. TRI data are also distributed internally to other parts of the facility that use this information and to the public and other interested parties that request this information. Data distribution also includes supplier notification to customers for products that contain reportable substances.

- *Compliance and enforcement*. Compliance and enforcement activities include providing additional information to regulatory authorities for compliance reviews and inspections (response to notices is conducted as part of data distribution), maintaining detailed documentation, and addressing enforcement actions taken by EPA and states.

Figure II-1-1. Overview of TRI Reporting Process for Facilities



Each of these functions in the facility reporting process are described in the following chapters.

Chapter 2
Facility Program Management

PURPOSE

The purpose of the facility program management function is ensure that the facility meets EPCRA Section 313 requirements by annually reporting to EPA and the appropriate state TRI program. The amounts of Section 313 chemicals released directly into air, water, or land, and transfers to off-site facilities for treatment or disposal must be reported on Form R or Form A. Facility program management administers and oversees the TRI reporting program.

DESCRIPTION

Facility program management for the TRI compliance reporting program includes the following activities:

- Provide management, coordination, and facilitation of all TRI reporting activities.
- Conduct a final review of data to be submitted in the TRI reports.
- Provide certification signatures on Form R and Form A submissions (typically the plant manager for owner-operator and the environmental manager for the senior management official sign the certification statement).
- Process inquiries for developing TRI data summaries for the public (usually around the time of the TRI data release).
- Provide staff time for TRI compliance reporting (in-house and subcontracted).

Facility program management of the TRI reporting program varies depending on the size and complexity of facility and the number of Section 313 chemicals manufactured, processed, and used at a facility. For example, large, complex facilities with multiple processes and diverse operations typically require greater program management efforts than smaller, less complex facilities.

Chapter 3
Facility Mail Receipt Function

PURPOSE

The purpose of the mail receipt function for reporting facilities is to receive and route TRI information (e.g., notices, data profiles, instructions, and software) to staff for compiling and preparing Form R and A reports.

DESCRIPTION

The mail receipt function consists of receiving TRI-related information in the mail and routing it to staff for compiling and preparing Form R or A reports. For some facilities, the mail receipt function may include date stamping, logging, opening, sorting, and distributing mail to appropriate staff for compiling TRI data, preparing the Form R and A reports, and tracking correspondence for compliance purposes.

TRI information may also be downloaded from the EPA's TRI Internet site. The Web site provides the ATRS and reporting instructions mailed to the facilities. Facilities that download their TRI reporting information avoid the date stamping, logging, opening, and sorting activities with manual mail receipt processing. Staff responsible for compiling data and preparing the Form R or A reports download the materials and may review the instructions, check previous submissions and comments, note changes in the instructions, and resolve any new interpretations.

Chapter 4
Facility Data Capture Function

PURPOSE

The purpose of the facility data collection function is to collect required data for making a compliance determination and, where appropriate, completing TRI Form R and A reports.

DESCRIPTION

The facility TRI data collection function consists of three general activities: TRI compliance determination, TRI data collection and chemical calculations, and Form R or A report preparation.

TRI Compliance Determination

Section 313 requires facilities submit an annual report if they manufacture, process, or otherwise use any of the approximately 600 listed chemicals above threshold quantities; are in a SIC code or industry group covered by the TRI program; and have 10 or more full-time equivalent (FTE) employees. Reporting facilities become familiar with the definitions, exemptions, and threshold requirements of the TRI program to determine if they are required by Section 313 to report.

In many cases, facilities may not be required to report (e.g., facilities that do not manufacture, process, or otherwise use toxic chemicals). EPA estimates that approximately 200,029 facilities make the TRI compliance determination.[1]

Data Collection and Chemical Calculations

Data on the toxic chemicals manufactured, processed, or otherwise used at a facility are collected to determine if the facility needs to report and perform calculations for completing the report. Two general scenarios for collecting TRI data are the following:

- *Centralized data collection and calculations*. Toxic chemical data are collected from each reporting facility or part of a facility and submitted to

[1] U.S. Environmental Protection Agency, *Toxic Chemical Release Reporting, Recordkeeping, Supplier Notification and Petitions Under Section 313 of the Emergency Planning & Community Right-to-Know Act (EPCRA), Information Collection Request Amendment Supporting Statement*, EPA #1363.07, June 23, 1999.

a central location where the data are reviewed, and calculations are performed to complete and submit Form R and A reports.

- *Decentralized data collection and calculations*. Each facility collects and reviews toxic chemical data for the facility, performs calculations, and submits TRI reports independently from other reporting facilities of the company.

Data may be captured for completing Form R and A reports through manual data entry or transferring information to ATRS from spreadsheets, in-house software, or databases. Reporting facilities may use a combination of methods and data sources for capturing TRI data. For example, a facility may capture 75 to 80 percent of the chemical data from the facility financial accounting system. The remaining information may be obtained directly from the other parts of the facilities (e.g., pilot plants, utilities, engineering department, laboratories) in separate databases, spreadsheets, or printed copy.

Part of facility and chemical data collected for other compliance reporting programs, such as Resource Conservation and Recovery Act (RCRA), NPDES, and AIRS, may also be used for TRI reporting. The data covered under these programs, however, may not provide sufficient information for TRI reporting because they vary widely in the number of chemicals covered, data elements required, and reporting thresholds.

Form Preparation

Reporting facilities prepare the Form R or Form A report after the relevant data have been collected; calculations have been performed to determine total releases, offsite transfers, waste management practices, and pollution prevention activities; and the data errors have been reconciled.

A variety of systems are used in preparing Form R and Form A reports. The systems and software generate the cover letter, printed copy, and diskette copy (if submitted). The following procedures are used for completing the reports and generating the submissions:

- *Database form preparation.* An internal database populates and generates the reports and cover letter. Typically, information from the database is loaded into ATRS or other in-house software to generate the report. The database can generate the entire report or only populate the ATRS reports in advance with static information (e.g., business name, facility information) to facilitate form completion.

- *Form preparation using ATRS or in-house software.* Form R reports and cover letters can be prepared on PCs using ATRS software or in-house proprietary software. Data are input to ATRS or proprietary software by

entering the information manually or transferring it from PC-based spreadsheets.

For ATRS submissions, the facility TRI staff review changes in the ATRS for the reporting year before completing the form. Pre-populated forms may be useful for those that report the same information every year (e.g. for utilities that use the same fuel, only the amount changes). However, for facilities that use different chemicals from year to year, they may start with a blank form to minimize the possibility of reporting previous year data.

- *Manual form preparation.* Information for completing reports and generating cover letters is entered manually. The data may be collected from other printed reports or printouts from other software or databases.

Very small facilities that do not have hardware manually collect data and prepare paper copies of the TRI reports for submission. Regardless of the system used and how the report is submitted, the facility manager signs the certification statement on the form.

Chapter 5
Facility Data Reconciliation Function

PURPOSE

Data reconciliation involves reviewing and reconciling facility or chemical information compiled for preparing TRI reporting. The purpose of the data reconciliation function is to resolve inconsistencies, identify omissions, and correct errors.

DESCRIPTION

Data reconciliation review serves to verify and validate that the data that have been collected are correct. Typically a facility identifies discrepancies, omissions, and errors using the following approaches:

- *Chemical calculations*. After the data have been collected and initial threshold calculations have been performed, further calculations (e.g., system throughput and material balance) may reveal the need to collect additional information to reconcile differences in the material received, processed, and consumed as well as material stored onsite.

- *Data validation and verification.* TRI data that have been collected are reviewed for validation and verification. The review may be conducted by facility staff or contracted out as part of an independent quality audit and review before TRI submission. During the review, the collected data are compared with previous year submissions to identify errors, omissions, or values that are out of range. Data manually entered into reporting database or transferred from other databases or spreadsheets are also checked for correct values.

  Errors identified are resolved by contacting the individual or department responsible for providing the data as part of data reconciliation. Data review, calculations, and validation activities can be time- and labor- intensive because they require database queries, search of historical information, and phone contacts to persons at the facility involved in the data collection. Facilities that have been reporting can reduce data reconciliation efforts after they establish a systematic approach to collecting and reviewing data.

- *Data reconciliation and confirmation.* Once reports have been received and are being processed at the EPCRA Reporting Center or state agencies, the reporting facilities may be contacted to reconcile any inconsistencies

or errors in the data they submitted. Approximately 6 months after the reporting deadline, facilities receive a profile of their submissions from the EPCRA Reporting Center to identify remaining errors and confirm that the data were captured in the TRI database. States may also send a copy of the state report.

- *Data quality review.* Reporting facilities are periodically contacted by the EPA to determine how they are estimating release quantities and complying with Section 313 requirements.

Chapter 6
Facility Data Archive

PURPOSE

The purpose of the data archiving function for reporting facilities is to meet the regulatory requirements and business needs for tracking, storing, searching, and retrieving TRI Form R and A reports and associated documentation and correspondence.

DESCRIPTION

Facilities retain copies of completed forms and records used to fill out the forms for at least 3 years from the date of submission. Many facilities maintain their archives for each year they report. The records include estimation methodology and calculations, engineering reports, inventory, incident and operating logs, and other supporting materials. Record-keeping allows a facility to use the information in making calculations in subsequent years and as documentation in the event of a compliance audit or inspection. The facility data archive function also includes responding to state and EPA notices and data inquiries and requests for data that will be publicly released.

Depending primarily on the size of the company, the type of activity, and number of Section 313 chemicals manufactured, processed, or otherwise used, record-keeping systems may include central files or an internal database. Paper copies of Form R and A reports (including trade secret submissions) and related documentation and correspondence are typically filed in a central filing system by reporting year.

Electronic storage systems vary among reporting facilities. They range from PC databases or spreadsheets to fully integrated information management systems for large reporting facilities with multiple compliance reporting databases (e.g., TRI, RCRA, Clean Air Act [CAA] Title V, NPDES). In some cases, facility TRI databases and spreadsheets include data from other compliance reporting programs and databases.

Chapter 7
Facility Data Distribution

PURPOSE

The purpose of the data distribution function for reporting facilities is to submit TRI Form R or A reports to the EPCRA Reporting Center and the state TRI program where the facility is located. Data distribution also includes distributing data internally to other parts of the facility that use this information and releasing TRI data to the public and other interested parties that request this information.

DESCRIPTION

The data distribution function consists of submitting paper and magnetic media submissions to the EPCRA Reporting Centers and state TRI programs, internal distribution within the facility or organization, and supplier notification.

- *Form submission.* Paper or magnetic media submissions are mailed via the U.S. Postal Service or another carrier, such as Federal Express, to the EPCRA Reporting Center and states where the facilities are located. In reporting year 1997, more than 96,000 submissions (nearly 83,000 Form R and more than 13,000 Form A reports) were submitted. Nearly 40 percent of the submissions were made in hard copy, and more than 60 percent were made on magnetic media.[1]

- *Internal distribution.* TRI data are also distributed within the facility for a variety of uses that include developing press releases to the public, management reports, and annual updates.

- *Supplier notification.* As part of data distribution, reporting facilities that supply mixtures or trade name products containing reportable substances annually notify their customers of the product's composition if the customer is subject to Section 313 reporting or sells the product to another company that is subject to reporting. Supplier notification is required to permit customers to make threshold determinations and complete reports for their facilities. The notification is by a letter identifying the chemical by name and Chemical Abstract Service (CAS) number and its percentage

[1] Environmental Protection Agency, *EPCRA Reporting Center Annual Report*, April 1, 1998 through March 31, 1999, and interview and documentation provided by EPCRA Reporting Center on June 8, 1999. Higher percentages of magnetic media are cited in other TRI publications, such as the 1999 ICR Amendment (EPA #1363.07).

by weight in the formulation, or on material safety data sheets for the product.

Chapter 8
Facility Information System

PURPOSE

The purpose of the information system function is to support data collection, data processing, calculations, and report preparation for EPCRA Section 313 compliance reporting.

DESCRIPTION

The information system support function includes activities, such as hardware acquisition, installation and maintenance, software development, testing and maintenance, procedure development, operations system support, user support, and training.

The type of information systems used for EPCRA reporting to the TRI program varies widely among reporting facilities. They range from no information system for small facilities, to PC databases (including UTIL software) or spreadsheets, to fully integrated information management systems for large reporting facilities with multiple compliance reporting databases (e.g., TRI, RCRA, CAA Title V, NPDES).

Chapter 9
Facility Compliance and Enforcement

PURPOSE

The purpose of the compliance and enforcement function for reporting facilities is to ensure EPCRA Section 313 requirements are met for reporting releases and transfers of toxic chemicals.

DESCRIPTION

The compliance and enforcement function includes providing additional information to regulatory authorities for compliance reviews to address enforcement actions if taken. The following are key compliance and enforcement activities:

- *Compliance review.* Reporting facilities provide additional information to regulatory authorities for compliance reviews. (The data distribution function describes the information provided to regulatory authorities in response to notices and requests for clarification and correction.)

- *Compliance inspections.* On the basis of the compliance review, the facility may be scheduled for a compliance inspection.[1] To prepare for a compliance inspection, facility staff may take several weeks to verify that the proper documentation is complete and available. During the inspection facility staff accompany state or EPA inspectors to answer questions and provide additional information.

  Corrective measures and actions are usually taken in response to findings from the compliance inspection conducted by the state or EPA. The potential for enforcement actions is enough to bring most facilities in compliance in their Section 313 reporting requirements (civil fines are as much as $27,500 per day per violation).

  Some facilities contract with an independent third party to conduct a "self audit" annually to provide quality control and ensure compliance. The self audit is conducted after the reporting data have been collected and before the Form R or A is submitted to EPA and the state where the facility is located (see data reconciliation function).

- *Enforcement.* If enforcement actions are taken, the reporting facilities address the action (Notice of Violation [NOV], Administrative Order) or

[1] EPCRA reporting is also covered in multimedia inspections conducted by EPA regions.

face legal proceedings. Facilities maintain detailed documentation on the amounts of each Section 313 chemical manufactured, processed, or otherwise used and how the amounts were determined (see data archive function).

Part III
State

The EPCRA requires reporting facilities to submit copies of reports to states where the facilities are located as well as to the EPCRA Reporting Center.[1] Every state has a designated person to coordinate TRI activities. State programs range from those that aggressively enforce TRI legislation and provide public access to TRI data to those with less active programs and a limited scope.

The chapters in Part III present an overview of the state TRI process and identify the core functions for many state TRI systems. The sources for most of the information presented in this chapter are interviews with state EPCRA personnel.[2] We also used information from the results of the National Conference of State Legislatures' *1998 Toxic Release Inventory Assessment* to indicate how TRI data is used in states and territories.[3]

[1] The discussion that refers to states in this part as well as the remainder of the report pertains to the 50 states and 3 territories.

[2] Survey and telephone interview with David Fees, TRI Coordinator for Delaware, and EPA Toxic Release Inventory As-Is and To-Be Workshop, August 31, 1999.

[3] National Conference of State Legislatures, *1998 Toxic Release Inventory Assessment*, 1999.

Chapter 1
State Process Overview

State TRI programs receive, process, and store Form R and A reports submitted by facilities located in their states and distribute TRI data and information to facilities, the public, and other government agencies.

Figure III-1-1 presents an overview of the process used by state TRI programs. The reporting facility submits the TRI report by mail to the state TRI program and the EPCRA Reporting Center. TRI submissions are received in the mailroom at the state and are routed to the TRI program office where they are opened, sorted, identified, and prepared for processing. Paper and magnetic media submissions (if accepted) are sorted and routed to data capture where the data are entered in the state database. The media type determines the data entry process. Paper-based submissions involve manual data entry. The magnetic media submissions use 3.5-inch diskettes generated by ATRS or other software approved by the EPCRA Reporting Center. The diskette files from each facility are compiled into a database using the UTIL program or state-specific program. The data are read from the database for resolving errors during data reconciliation. The state data extract provided by the EPCRA Reporting Center is also reviewed to ensure that states received the same data. After the data have been reconciled, they are stored physically in a central file room and electronically in the database, and are available for release. The database is used to generate the state report that is made available to the public, other state agencies, EPA regional TRI coordinators and enforcement staff, and the EPCRA Reporting Center.

The state TRI process includes the following core functions:

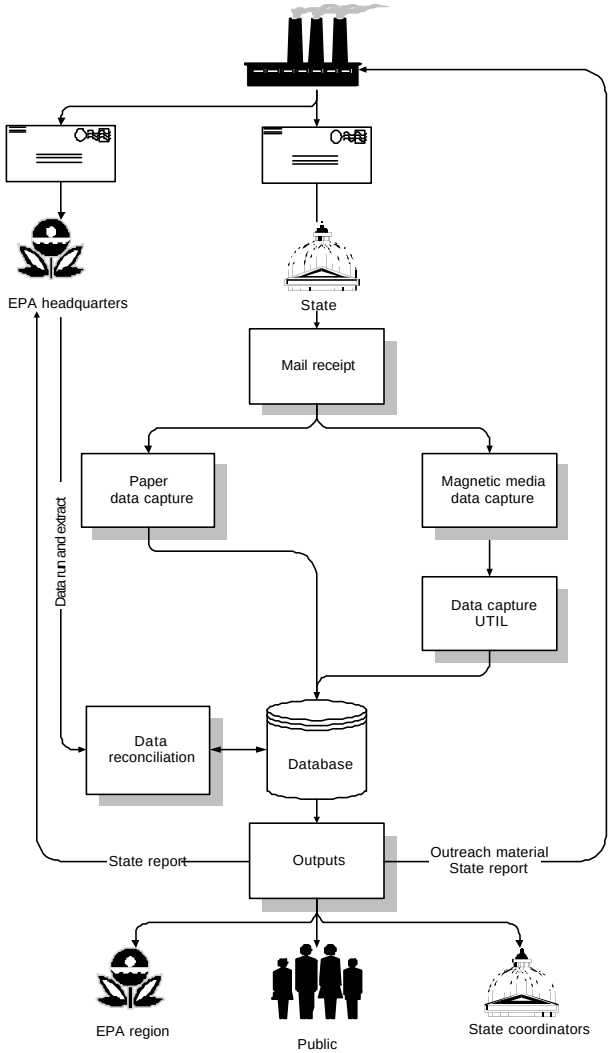
- *Program management* involves administering and overseeing the TRI reporting program.
- *Mail receipt* consists of receiving, opening, stamping, and sorting submissions in the mailroom.
- *Data capture* consists of capturing data on paper submissions and magnetic media submissions, if accepted by the state.
- *Data reconciliation* involves confirming and reconciling submission data.
- *Data archiving* involves sorting paper and magnetic media submissions (if accepted) and tracking each document using a unique identifier (e.g., file or report number).

- *Data distribution* involves releasing TRI data to the public, reporting facilities, other state TRI coordinators and agencies, EPA regional coordinators, and the EPCRA Reporting Center via a state report.

- *Information system* consists of developing, testing, maintaining, and supporting the state TRI database and the UTIL or state software for generating the database.

- *Compliance and enforcement* consists of compliance assistance and outreach, compliance review, compliance inspections, and enforcement actions where warranted.[1]

Figure III-1-1. Overview of State TRI Process



[1] Most state TRI programs (28 states) do not conduct inspections. Only 13 states have enforcement authority under state law. Very few states have enforcement cases; most compliance issues are addressed with contacts made by the state TRI coordinator.

State TRI program functions differ from the federal program as established by the authorization and function of each state's program. The unique features of state TRI program functions include the following:

- *Additional reporting requirements.* Several state and territorial TRI programs have additional reporting requirements, such as facilities that are not covered by the TRI, calculations for release quantities, and plans and goals for toxic use reduction or pollution prevention activities.

- *Trade secret submissions.* In general, states *do not* process trade secret submissions. They receive sanitized (i.e. releasable to the public) versions of the trade secret submission from the EPCRA Reporting Center.

- *Data elements.* Many states *do not* capture all data elements from Form R in their systems (32 states in 1998).

- *Distribution of state TRI data*. State TRI programs provide the state TRI data quicker than the EPCRA Reporting Center. They typically release data within 2 to 3 months after the July 1 reporting deadline as compared to 9 months for the data release from the EPCRA Reporting Center.

To assist state TRI programs in meeting EPCRA requirements, EPA maintains a national TRI database and provides state data and reporting software. Approximately 33 states have databases for maintaining a toxic release inventory. At least four states offer online access to their databases.

Table III-1-1 depicts the use of EPA TRI reporting software and data by state TRI programs. Approximately 91 percent of states have access to the Internet, 72 percent use the EPA's TRI Web site, and approximately 33 percent download the ATRS program. Nearly half of the states use ATRS, and 44 percent use the UTIL software for creating master databases of ATRS submissions. More than half of the states use *Envirofacts* for accessing TRI data. Many state TRI programs are using software and accessing data provided by the EPA.

Table III-1-1. Access and Use of EPA Data and Software by State TRI Programs

Percent of states	Program use
72	Use EPA's TRI Web page
51	Access *Envirofacts* for TRI data
33	Use EPA's Web site to download reporting software
49	Use ATRS
44	Use UTIL

Source: National Conference of State Legislatures, *1998 Toxic Release Inventory Assessment*, 1999.

Each of the core functions and management of the state TRI program are discussed in the following chapters.

Chapter 2
State Program Management

PURPOSE

The purpose of state program management is to oversee the state TRI program that maintains an inventory of annual toxic emissions reports for facilities located in the state and makes that inventory accessible to the public and government organizations.

DESCRIPTION

State program management involves a broad range of oversight for the following activities:

- Receiving and processing Form R and A submissions
- Maintaining the state TRI database
- Reconciling submission data errors
- Maintaining a submission tracking and storage system
- Producing the annual state TRI report
- Communicating EPCRA requirements and providing TRI information and compliance assistance to facilities
- Interacting with other state TRI coordinators
- Serving as liaison with the EPA regional coordinator and the EPCRA Reporting Center
- Providing requested information
- Providing assistance in compliance reviews and enforcement actions.

Program management activities also include personnel and staffing management and policy development based on regulatory analysis.

Program requirements for many state TRI programs are essentially the same as EPA's reporting requirements. Although 44 states have no additional reporting requirements beyond those in the EPA TRI, several states and territories collect

additional information. Some states require additional reporting, such as reporting of plans and goals for toxic use reduction or pollution prevention activities, facilities in some nonmanufacturing industries (not covered by TRI through 1997), and calculations for the release quantities.

Chapter 3

State Mail Receipt Function

PURPOSE

The purpose of the mail receipt function is to prepare submissions received by mail for data processing, tracking, and archiving.

DESCRIPTION

The mail receipt function consists of opening mail received in the mailroom, date-stamping and logging the submission, and identifying and sorting submissions for storage and archive tracking and processing. States may assign a unique identifier to the submission as part of the mail receipt process. Depending on the state program, mail receipt of submissions may be entered manually on a log or electronically into a tracking and storage system.

Thirty-seven states accept the 3.5-inch diskettes containing TRI submissions generated by ATRS or other software. Magnetic media submissions are sorted from paper submissions for processing. Typically, submission receipt is not acknowledged. After the submission is sorted, it is routed for data capture processing and storage.

Chapter 4
State Data Capture Function

PURPOSE

The purpose of the data capture function is the entry of "as submitted" facility and chemical information from paper and magnetic media submissions into a state database. During data capture, "as submitted" data are flagged for potential errors and omissions that affect data capture processing. The data reconciliation function resolves these problems (see Chapter 5). Some states perform initial data reconciliation activities (e.g., error check, omissions, duplicates and revisions) during data capture.

DESCRIPTION

Fifty-three states and territories accept TRI submissions. Specifically, 37 accept both magnetic media and paper Form R and A submissions, 2 require magnetic media submissions, and 14 accept only paper-copy submissions (although 10 states plan to accept magnetic media in the future). States do not process trade secret information. They receive the sanitized version of the submission from the EPCRA Reporting Center.

Thirty-three states maintain a computerized state TRI database.[1] Most of these states capture data in their databases using the following approaches:

- *Paper input to state database*. Data from paper submissions are entered directly into the state database.

- *Magnetic media input to state UTIL database*. Data from magnetic media submissions (ATRS or other in-house EPA-certified software that reads into UTIL) are loaded into the master database using UTIL.

Twenty-four states use the UTIL software for creating a master database of magnetic media submissions received on diskette (43 states are interested in downloading UTIL as new versions become available). States that do not use UTIL, use their state databases to capture and store data from electronic submissions.

Thirty-two states do not capture all data elements of Form R in their databases. Instead, they focus on entering facility name and address (22 states), chemical names (21 states), release quantities (21 states), transfer inquiries (17 states), and

[1] Only 34 states fund EPCRA Section 313 TRI activities.

the number of forms sent by the facilities (13 states). Seventy-eight percent of the states copy Form R revisions submitted by the facilities into their databases.

Data capture processing streams include paper Forms R and A, miscellaneous documents on paper (including withdrawal requests and notification responses), Forms R and A on magnetic media, and Form R and A revisions.

Data capture processing of paper Form R and A submissions involve rapid data entry and identification of omissions and potential errors. Data capture processing for magnetic media involves a virus scan and preparation for upload to the state database. The upload process can be time-intensive if batch uploading is limited (e.g., 20 submissions at a time). Direct transmission of magnetic media submissions can enhance the upload process.

Chapter 5
State Data Reconciliation Function

PURPOSE

The data reconciliation function involves reviewing and reconciling facility or chemical information data as submitted by the facilities. The purpose of the data reconciliation function is to eliminate duplicates, resolve inconsistencies, identify omissions, and eliminate errors.

DESCRIPTION

The same data reconciliation is used for paper and magnetic media. Typically, a state identifies and reconciles duplicates, discrepancies, or errors using the following approaches:

- *Review of submission data*. Data flagged during data capture are reviewed and compared to data in the state database and previous submissions to identify potential duplicates, discrepancies, or errors.

- *Comparison with EPA TRI data*. Forty-two states compare their data with the EPCRA Reporting Center's TRI data. They access the EPA state extract data on diskette and compact disk—read-only memory (CD-ROM), and Envirofacts (26 states access Envirofacts on-line; 48 states have access to the Internet). Printouts of state data by the EPCRA Reporting Center are provided at the end of October and used to validate state and EPA data.

- *Compliance review by EPA regional coordinator*. Potential errors are communicated to the state TRI coordinator. Some TRI coordinators in the EPA region review annual and aggregate TRI reports from the EPCRA Reporting Center, state reports, and industrial directories to identify non-reporting facilities, inconsistencies in reported quantities of toxic chemicals, or other potential compliance violations.

To resolve most errors identified, the state representative calls or e-mails the facility technical contact. Simple errors (e.g., wrong address information) are typically corrected and documented, and no revision is requested. Other errors are corrected by the reporting facility submitting a voluntary revision. If the facility does not respond to the telephone contact, a letter is usually sent to reiterate the

data problem and request a correction. If the facility does not respond to the letter, the problem is often referred for inspection or enforcement action by the state or EPA region.

Chapter 6
State Data Archive

PURPOSE

The purpose of the data archive function is to ensure the states meet the EPCRA requirements to retain original submissions from the beginning of their program to the current year. Retention of original submissions provides the documentation needed to validate data in state TRI databases and source information for compliance review and enforcement activities.

DESCRIPTION

Tracking and storage systems vary by state. Some state programs use a sophisticated information management system for tracking submissions and their status during processing. Other state programs have no formal tracking or archiving system. In general, TRI submissions are typically tracked through manual date-stamping and logging of incoming mail. Paper and magnetic media diskettes are stored in a central filing system. Original submissions are compiled in state databases or UTIL-generated master databases as a master file that contains a record of each From R and A submission. The file contains the latest name, location, and chemical information.

Some states archive TRI submissions on microfiche. For example, Illinois keeps the paper Form R copy for 2 years and transfers the report to microfiche and shreds the original paper report. Illinois stores magnetic media submissions on an electronic database with a backup offsite, and the original diskette submission is decommissioned.

Chapter 7
State Data Distribution

PURPOSE

The primary purpose of state data output is to provide TRI data to the public, government, and facilities in accordance with state law and Section 313 of EPCRA.

DESCRIPTION

State TRI programs provide several outputs. In addition to providing outputs to facilities and the public, many states send state reports to the EPA regional coordinator and the EPCRA Reporting Center. Some states indicate that they receive few requests for their TRI information, while other states provide information to citizens, public interest groups, state governments, and facilities. State TRI data outputs include the following:

- *State reports*. Twenty-six states provide annual state TRI reports. Most state data are available 2 to 3 months after the July 1 reporting deadline (typically quicker than the EPA data release). State reports are typically released several months after the data are available. The state TRI reports are provided as hard copy, on CD-ROM, and through the Internet. Fifteen states have TRI-related Web pages. At least four states have on-line access to their databases.

- *Data runs and analyses*. Many states query the state TRI database for analysis when requested (FOIA and other requests).

- *TRI information*. Forty-nine states provide TRI information (e.g., Form R, EPA TRI instructions, and other documentation) to reporting facilities and the public. Some states have developed a summary of reported information for each facility. This facility summary or profile assists in improving data quality.

- *Notices*. Some states send notices to reporting facilities that have not reported, have omissions in their Form R and A submissions, or have other reporting errors.

State programs use TRI data for several environmental programs. State TRI information is used as follows: 48 states use TRI information to identify pollution prevention activities; 22 states use TRI information for emergency planning; 19 states use TRI information for geographic information systems or other

mapping services; and 19 states integrate TRI information with other databases. State TRI managers indicate that their priorities are outreach, compliance and enforcement, and training. Other priorities included data quality and integration, pollution prevention, and public access information.

Chapter 8
State Information System

PURPOSE

The purpose of the state TRI information system function is to provide timely and cost-effective access to high-quality TRI data submitted by reporting facilities located in the state. State information systems receive, process, and store facility reports of annual estimated releases and transfers of Section 313 toxic chemicals and serve as an information management tool to collect, organize, and disseminate TRI data.

DESCRIPTION

The information systems that the states use for TRI reporting consist of the state TRI database and UTIL for creating the database. Thirty-three states have TRI databases. Four states—Delaware, Indiana, Massachusetts and Ohio—have on-line access to their databases. Twenty-four states use the UTIL software for creating a master database of submissions received on diskettes. Other states use UTIL to view and print Form R and A reports contained on ATRS-created diskettes. All database files used by UTIL98 are in a standard dBASE format. Some state TRI coordinators convert the UTIL database files to another format (e.g., Access, FoxPro) and adjust fields (e.g., field names, lengths, character types) to meet their needs for analysis and state report preparation.

Chapter 9
State Compliance and Enforcement

PURPOSE

The purpose of most state TRI compliance and enforcement activities is to provide compliance assistance and information from the state database to EPA regional coordinators and EPA program offices for conducting compliance reviews and developing enforcement cases.

DESCRIPTION

Most states focus on identifying compliance violations for EPCRA Section 313 TRI reporting. Forty states do not have Section 313 enforcement authority under state law. At least 13 states have enforcement authority based on TRI criteria.

Compliance reviews focus on identifying facilities that are late in reporting or fail to report. Few states have TRI enforcement authority or cases. TRI information is also used for enforcement cases of other regulatory programs that indicate the use of EPCRA Section 313 chemicals.

Compliance and Enforcement Activities

State compliance and enforcement activities include the following:

- *Compliance assistance and outreach.* To explain EPCRA Section 313 TRI reporting requirements to facilities, states distribute state and EPA TRI documents, provide training, and provide technical assistance.

- *Compliance review*. Submission data, aggregate and query reports from state databases and the EPCRA Reporting Center, and industrial directories are reviewed to identify potential reporting violations (e.g., late or nonreporting facilities).

- *Compliance inspections*. Some states conduct compliance inspections to determine the need to build an enforcement case. Many state TRI programs (28 states) do not conduct inspections.

- *Enforcement cases*. Very few states have EPCRA Section 313 enforcement cases; most compliance issues are addressed with contacts made by the state TRI coordinator. Only Ohio, Illinois, and Wisconsin reported that they had enforcement cases in 1997.

Future enforcement actions by several states will include data quality violations in facility compliance reports (e.g., omissions and underreporting of Section 313 chemicals). The use of state and EPA TRI data will become increasingly more important in data quality investigations.

State Enforcement Process

Facilities that fail to report and respond to state telephone and letter contacts are targets for an inspection referred by the state or the region. If the inspection reveals that the facility is in violation and does not intend to comply with reporting requirements, an administrative citation and order, notice of violation, or fine may be issued.

States typically refer the most recalcitrant cases to the State Attorney General. Referral documentation includes facility information, chemicals not filed, and logging and tracking information. The referral documentation is given to a staff attorney who prepares the case for the State Attorney General.

Part IV
Region

Although the TRI coordinators and enforcement staff in the 10 EPA regions are not directly involved in processing TRI submissions, they have important roles in the TRI reporting program. This part presents an overview of the TRI process and identifies the primary functions of the EPA regional coordinators and enforcement staff. Because the region is not involved in processing Form R and A reports, the functional processes presented for the other stakeholders are not applicable and are not presented. Sources for most of the information presented were from a TRI workshop[1] and two interviews with EPA regional coordinators and enforcement staff.

REGION PROCESS OVERVIEW

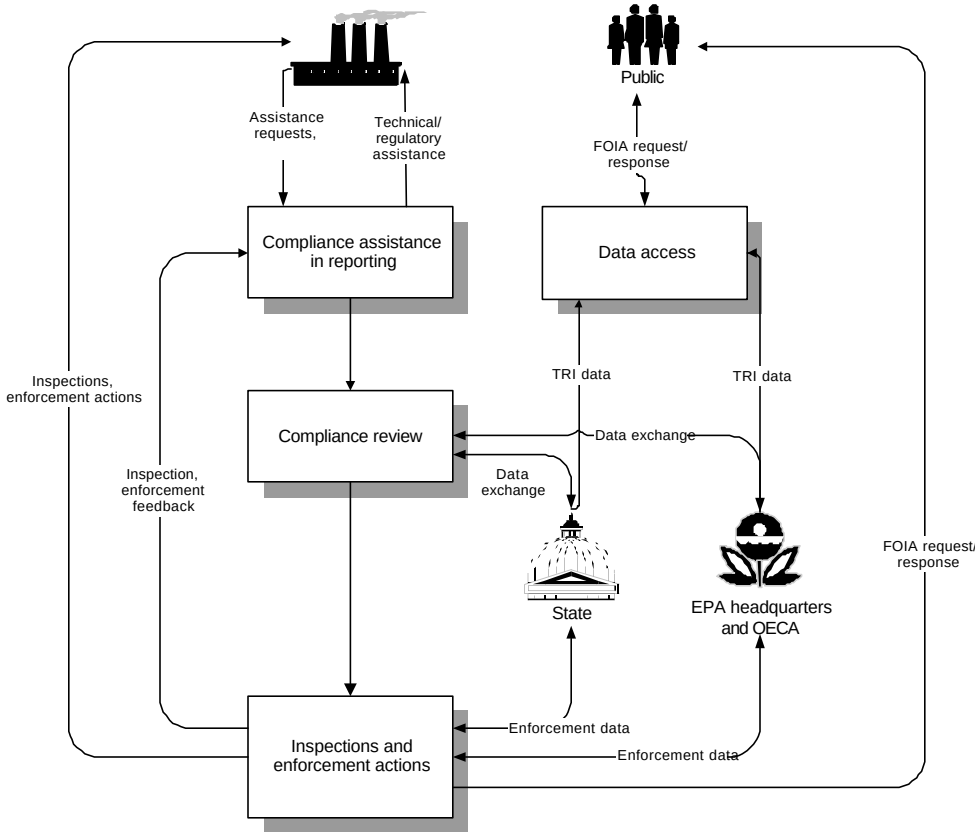
As shown in Figure IV-1, EPA regional TRI coordinators work closely with reporting facilities by providing training, outreach, regulatory interpretation, and technical assistance in completing forms. EPA regional coordinators and enforcement staff work closely with state coordinators in their regions on compliance reviews, inspections and enforcement, and outreach efforts. EPA regional coordinators also serve as a liaison between the states in their regions, EPA headquarters (TRI Information Management Branch [IMB], Environmental Assistance Division [EAD]), other EPA program offices, and other regional coordinators. The following regional activities are discussed in this part: data access, compliance assistance in reporting, compliance review, and inspection and enforcement activities carried out by regional TRI coordinators and enforcement staff.

DATA ACCESS

Regional coordinators and enforcement staff process information requests and FOIA requests made by the public and other entities in their region. Many regional coordinators query EPCRA Reporting Center data to respond to the information and FOIA requests. Regional enforcement staff provide enforcement-related information in response to public inquiries. The regional coordinator also provides assistance to individuals, public interest groups, the media, and others in accessing, understanding, and using TRI data. They refer several users of TRI data to the EPA TRI Web site.

[1] EPA Toxic Release Inventory "As-Is" and "To-Be" Workshop, August 31, 1999.

Figure IV-1. Overview of EPA Regional TRI Process



COMPLIANCE ASSISTANCE IN REPORTING

EPA regional coordinators work with reporting facilities in their regions to ensure timely and accurate reporting by facilities subject to EPCRA Section 313 reporting requirements. In response to telephone and email requests for assistance, regional coordinators direct reporting facilities to the EPA TRI Web site for guidance and software. If they are unable to access the TRI Web site, the regional coordinator provides TRI documents and information (e.g., instructions, technical guidance, and regulatory interpretation) on CD-ROM and paper via the mail.

Many regional coordinators provide training sessions to reporting facilities in the states in their region. The training informs reporting facilities of current reporting requirements and provides step-by-step guidance for completing and making Form R or A submissions. The training is typically updated to include relevant issues that result from previous compliance reviews and enforcement actions. The training sessions complement the training provided by EPA headquarters as well as the information provided by state TRI programs in their regions.

COMPLIANCE REVIEW

The primary purpose for the compliance review is to identify nonreporting facilities in the region. Many regional coordinators or enforcement staff review the list of reporting facilities provided by the EPCRA Reporting Center or state databases in their region. Some regional coordinators and enforcement staff prefer to use TRI data provided by the EPCRA Reporting Center that can be accessed on the EPA intranet posted through Envirofacts (in previous years they accessed the TRIS mainframe). Other regional coordinators and enforcement staff prefer to use data from their state TRI programs because they are typically available faster that TRI data posted on Envirofacts. The regional coordinator or enforcement staff compares facilities listed by SIC code with facilities listed in industrial directories or databases for states in their regions. Potential nonreporting facilities are identified and contacted to determine if an inspection is needed. Some regional coordinators also use the database list for training and outreach.

Many regional coordinators and enforcement staff also review the chemical submissions to identify facilities that may have reported inaccurately. The review typically involves comparing the current submission with previous submissions. The submissions of the 10 facilities in each state that report the largest quantity of Section 313 chemicals (i.e., "the top 10") are typically reviewed by the regional coordinator.

State TRI coordinators are contacted if potential non-reporting facilities are identified or significant discrepancies are noted in submissions that are reviewed. The regional coordinator also exchanges findings from the compliance review or data corrections with EPA headquarters.

INSPECTIONS AND ENFORCEMENT ACTIONS

EPA regions develop their own strategy for targeting inspections and taking enforcement actions. Typically, the compliance review indicates a facility has not reported or has inaccurately reported and is potentially in violation of EPCRA reporting requirements. These facilities are typically contacted via telephone or mail to determine if an inspection is needed. If the compliance review and followup contact indicate a potential violation, an inspection is scheduled, and the facility is asked to collect information for the inspection.

The number of inspections conducted annually varies by region and number of facilities targeted.[2] For example, the Region 3 coordinator and enforcement staff may conduct nearly 100 inspections annually. Region 5 enforcement staff recently conducted as many as 200 inspections over a 3-year period and currently conduct approximately 30 inspections a year (limited by staff resources).

[2] EPCRA reporting is also covered during multimedia inspections conducted by EPA regions.

If a facility is in violation, the regional coordinator takes enforcement actions as warranted. Enforcement actions may include administrative orders, notices of violation, fines and penalties, and civil action referrals. Regional coordinators also assist other state and EPA program offices in building enforcement cases and taking enforcement actions. The signature of the owner-operator or senior management official on a Form R or A submission is crucial evidence in building an enforcement case.

State coordinators may refer a few compliance violation cases to the regional coordinator or enforcement staff. Typically, the cases involve recalcitrant facilities that were repeatedly contacted (at least three times) by the state coordinator via telephone or letter but failed to respond.

Enforcement activities are reported to OECA, Office of Compliance at EPA headquarters. Regional enforcement staff mail a diskette monthly to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/Toxic Substances Control Act (TSCA) Tracking System (FTTS) and DOCKET system. Data from the FTTS are transferred to the National Compliance Database (NCDB) System monthly. Data from the NCDB System are used to manage the Pesticides and Toxic Substances Compliance and Enforcement Program at a national level. The NCDB System tracks all compliance, monitoring, and enforcement activities from the time an inspection is conducted until the case is closed or the enforcement action is settled.

The DOCKET system is used to record federal administrative and judicial enforcement actions taken by the regions and headquarters and is the source of official action on federal enforcement. The information includes records on company name, facility location, statute under which the action was taken, penalties, costs of coming into compliance, nature of complying action needed, pollutants addressed, and supplemental environmental projects.

Part V
Federal

Section 313 of EPCRA requires facilities that manufacture, process, or otherwise use any of the listed toxic chemicals to submit copies of reports to EPA. It also requires the EPA to maintain an inventory of annual toxic emissions reports and make the inventory available to the public. The EPCRA Reporting Center compiles and evaluates TRI information from Form R and Form A reports submitted by regulated facilities. EPA also provides this information to states and the public through annual data releases and periodic updates.

The chapters in Part V present a description of the process and identify the core functions at the federal level of the TRI program. The sources for most information in this part are interviews and written EPA documentation.

Chapter 1
Federal Process Overview

The EPA manages the EPCRA Reporting Center, a central receiving and processing facility for Form R and A compliance reports. It accepts data on paper forms (including withdrawals and other miscellaneous documents) and all magnetic media submissions generated by the ATRS or software approved by the EPCRA Reporting Center. The receipt and processing of submission data are tracked through each core processing function. This chapter identifies the core processing and support functions of the TRI system and provides an overview of the TRI data process flow.

CORE AND SUPPORT FUNCTIONS

This section describes the core processing and system support functions of the TRI process.

Core Processing Functions

- *Mail receipt* consists of stamping (postmark and date of receipt) and identifying, sorting, and labeling submissions with barcodes for tracking.
- *Data capture* consists of capturing data from paper Form R and A submissions and miscellaneous documents, including withdrawal requests, magnetic media submissions, and trade secret submissions.
- *Data reconciliation* involves confirming and reconciling submission data and verifying keyed data.
- *Data archive* involves storing paper and magnetic media submissions and tracking each submission and document using a unique file number. The number identifies the document type, submission year, and DCN.
- *Data distribution* involves releasing TRI data to the EPA and states via the EPA intranet site; releasing data to the public via EPA's Internet site, the RTK NET, and GPO; and sending notices to submitters for confirming submission data and correcting problems and data errors. Data distribution also includes annually sending out reporting instructions and the latest version of ATRS to reporting facilities.

System Support Functions

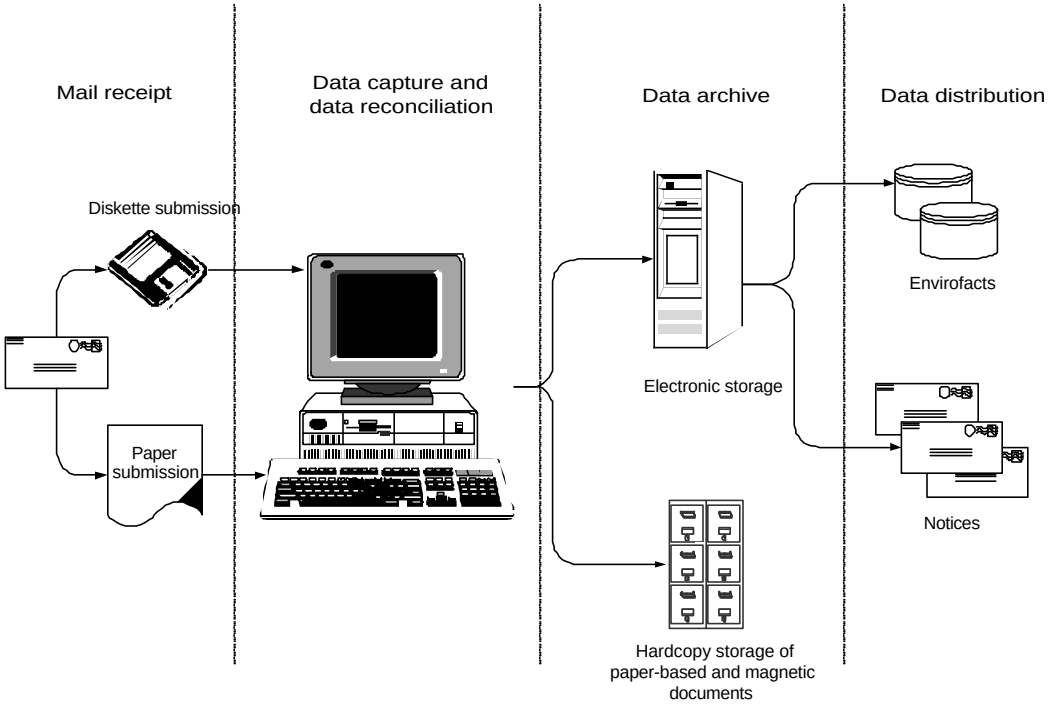
- *Program management* consists of managing and overseeing all EPCRA Reporting Center operation and administrative activities by EPCRA Reporting Center managers and IMB managers.

- *Information system* involves developing and supporting the ATRS, the UTIL software, the TRIM system hardware and software, and other support activities related to information systems.

- *Compliance and enforcement* involves the activities of monitoring and ensuring that the reporting community in meeting the TRI reporting requirements.

Figure V-1-1 highlights the core functions for processing TRI submissions. System support functions are presented in Chapters 2, 8, and 9.

Figure V-1-1. Core Functions of TRI Process

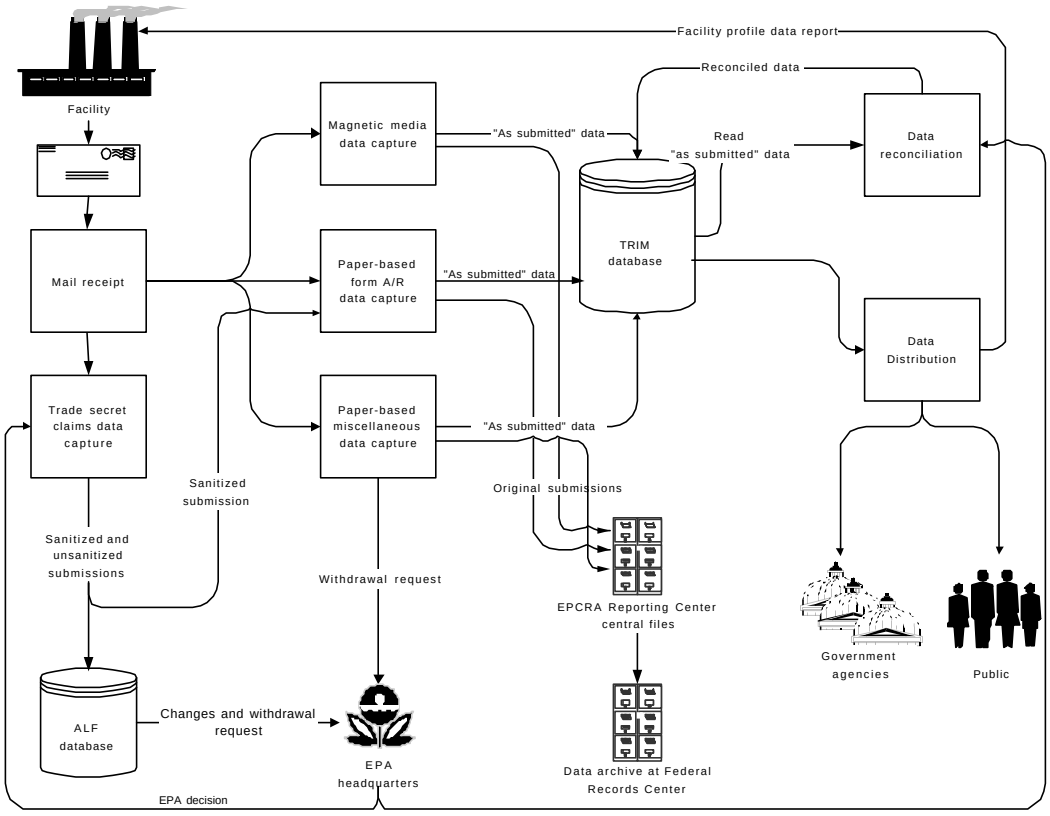


Forms R and A and associated documents submitted on paper and magnetic media are processed in the TRIM system using a suite of software applications. The applications include the Records Management System (RMS) module that logs and tracks submissions, the ATRS Copy module that captures magnetic media data, and the TRIM module that captures paper-based data and performs data reconciliation. The function of each application is described in Chapter 8.

TRI DATA PROCESS OVERVIEW

Figure V-1-2 presents an overview of the TRI process. Facilities mail in their submissions. A submission enters the mail receipt process in the mail room where it is opened, sorted, identified, and prepared for one of the four processing streams: paper Form R and A submissions and revisions, miscellaneous documents (including withdrawals), magnetic media submissions and revisions, and trade secret submissions. The reports and documents move from mail receipt to data capture where the data are entered into the TRIM Oracle database (trade secrets are processed separately). The data are read from the TRIM database for data reconciliation. The data reconciliation process resolves data errors and inconsistencies. A profile of the data in the TRIM database is mailed to the submitter for correction and confirmation. Other outputs from the TRIM database are made available to the EPA Internet and intranet sites, the public, and government agencies. TRI submissions are stored in central files at the EPCRA Reporting Center and after 1 year are transferred to long-term storage at the Federal Records Center (FRC).

Figure V-1-2. Overview of TRI Process



Note: ALF = Automated Ledger Function.

The core processing and system support functions are described in the remaining chapters in this part. The purpose, description, and automated data processing tools are presented for each function.

Chapter 2
Program Management

PURPOSE

The TRI program management manages and oversees all EPCRA Reporting Center operational and administrative activities. The program management integrates and coordinates policy implementation and data processing for the TRI program.

DESCRIPTION

Management of the TRI program by EPA is performed by managers both at EPA headquarters and the EPCRA Reporting Center. They work closely to ensure unimpeded processing of TRI compliance reports, develop and maintain the TRIM system, and provide timely access to the TRI information.

EPA Headquarters Managers

IMB in the Office of Pollution Prevention and Toxics (OPPT) oversees the TRI program at EPA headquarters. The IMB, which is a part of the Information Management Division (IMD), manages and oversees all EPCRA Reporting Center operational and administrative activities. TRI policy is developed and established in the OPPT by the TRI Branch of EAD. Because of the data process and functional focus of this report, this chapter focuses on the management activities of the IMB for the EPCRA Reporting Center.

Nine EPA managers are responsible for overseeing and administering the 23 tasks for the EPCRA Reporting Center (see Appendix G for a listing of the tasks). Each IMB manager works directly with an assigned EPCRA Reporting Center manager on a task. The IMB manager provides direction and monitors all task activities, including planning, budget, task execution, deliverables, and administration. The IMB manager also coordinates with other task managers to ensure adequate oversight and integration of all program functions, and the efficient and cost-effective expenditure of allocated resources.

EPCRA Reporting Center Managers

An EPA headquarters contractor operates and maintains the EPCRA Reporting Center. Eleven EPCRA Reporting Center managers report and coordinate with respective IMB task managers. The EPCRA Reporting Center program

management functions include overseeing two primary types of activities: processing forms; and designing, developing, implementing, and maintaining the TRIM system. Program management activities also include preparing work plans and budgets for each task, monitoring task activities and expenditures, reporting potential problems, preparing administrative reports to EPA headquarters, attending and supporting meetings, recommending and providing technical experts, and managing personnel administration and staffing.

Chapter 3
Federal Mail Receipt Function

PURPOSE

The purpose of the mail receipt function is to prepare mail pieces for data processing and submission tracking throughout the data processing functions and storage.

DESCRIPTION

The mail receipt function is highlighted in the TRI process flow in Figure V-3-1, and the functional steps are presented in Figure V-3-2. TRI submissions via mail are received in the mail room where they are sorted, prepared, identified, and labeled for system tracking as well as storage and archive tracking.

Figure V-3-1. Overview of Mail Receipt Function in the TRI Process

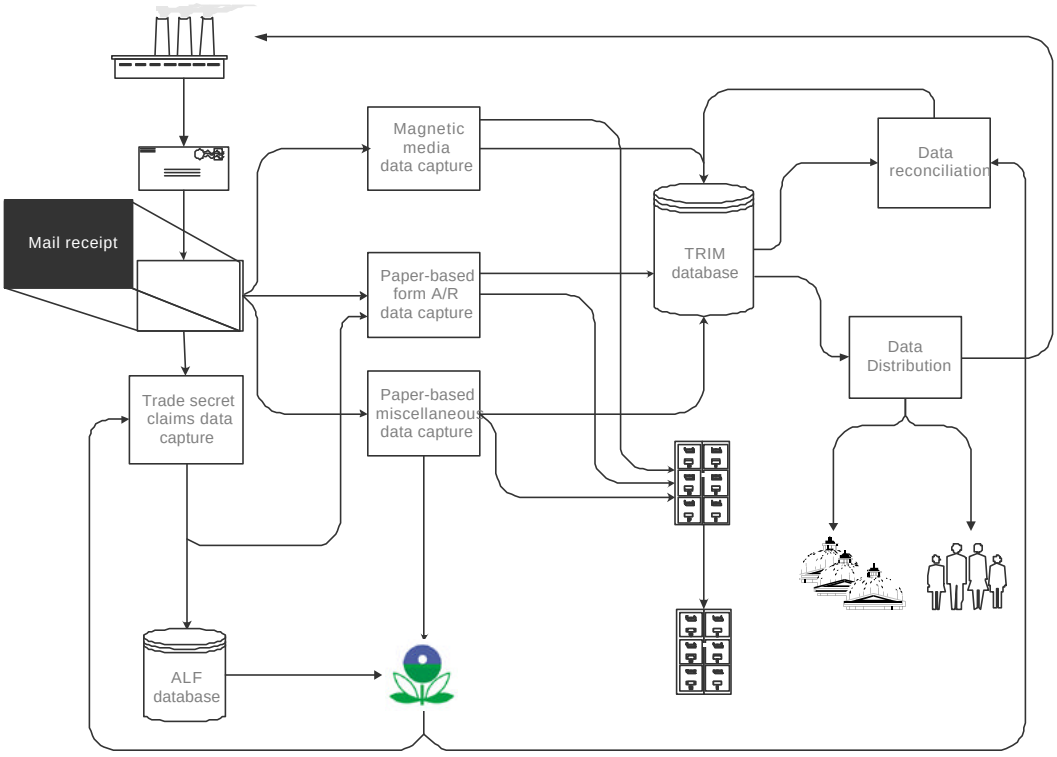
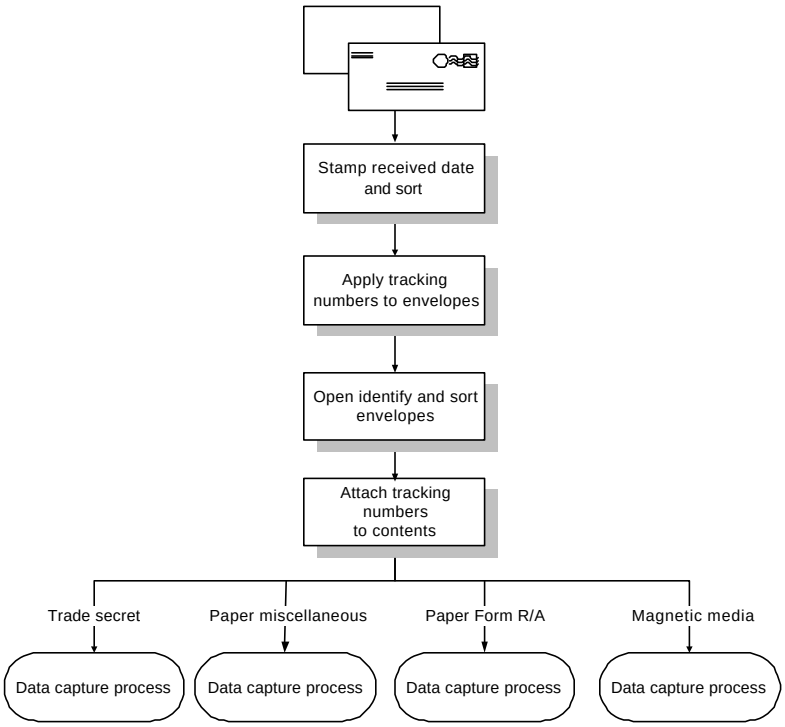


Figure V-3-2. Functional Steps of Mail Receipt



The mail receipt function accomplishes two tasks: mail preparation and submission tracking.

Mail Preparation

The following five steps prepare a mail piece received in the mailroom before data entry begins:

- Mail is received from facilities in the mailroom at the EPCRA Reporting Center for processing.
- A received date is stamped on the envelope, which is sorted by the received date (see Chapter 9 for enforcement and compliance information on the received date).
- An envelope tracking number is applied to the outside of the envelope.
- The mail piece is opened, identified, and sorted into paper or magnetic media submission processing. Paper submissions are further identified by one of the following categories: Forms R and A, trade secret claim, or other miscellaneous (that includes withdrawal requests, notifications, and other correspondence).
- Additional pre-printed bar code tracking number labels are applied to the contents of the envelope. The RMS tracks the numbers, known as file

numbers, that are linked to the submissions. Table V-3-1 provides a list of file numbers used to track submissions by media type and category (see Appendix C for information on submission tracking numbers).

Table V-3-1. Tracking File Numbers

File number	Description
Envelope number	Envelope tracking number
Submission number	Paper Forms R and A tracking number
Diskette number	Diskette tracking number
Diskette folder	Diskette cover letter tracking number
Other miscellaneous number	Other miscellaneous tracking number
Distinct chemical number	Chemical tracking number

Submission Tracking

The entire mailing (i.e., the envelope and the contents of the envelope) is associated with a tracking number that is linked in the TRIM system to the physical submission (see Chapter 9 for a discussion on of original submission retention, storage, and use in enforcement cases). With tracking numbers physically affixed on the mailings, the submissions move into one of four processing streams for data capture—Paper Forms R and A, magnetic media, paper miscellaneous, and trade secret.

SECURITY

During mail receipt, the postmark and receipt dates are tracked in the RMS module of the TRIM system for processing and compliance purposes. Trade secret claims are physically separated in the mailroom during mail receipt for secure, independent processing. They are maintained on ALF, a trade secret system. Sanitized data from ALF are made available for standard paper-based processing (see Chapter 4 on data capture).

Data integrity is maintained in the TRIM system to ensure that the "as submitted" data have not been altered and are securely stored. Unauthorized data modifications cannot occur in the TRIM system at the EPCRA Reporting Center because the Oracle database is secured by user passwords accessible by only EPA and EPCRA Reporting Center staff. Information distributed to the *Envirofacts* intranet site is available to authorized users, such as EPA program offices, EPA regions, and states.

An authorized signature by the owner-operator or senior management official is required on the certification statement in Part I, Section 3, of Form R that attests to the accuracy, completeness, and truthfulness of the data represented (see Appendix A). Current electronic reporting by magnetic media requires a

paper-based signature in a cover letter that accompanies the diskette. False and misleading information that has been certified as accurate and complete may be subject to criminal prosecution. All paper submissions are at the EPCRA Reporting Center facility are secured by limited access key code and log sheets.

AUTOMATED DATA PROCESSING SYSTEM

The mail receipt function is performed in the RMS module of the TRIM system. The RMS is the tracking system that provides information on the movement of the submission throughout processing and storage. Both paper and magnetic media are processed into the RMS, except trade secret claims, which are processed in ALF.

The RMS module should improve the data tracking and collection process by eliminating the manual application and linking of the DCN for magnetic media submissions. One less file number is manually applied to the magnetic media submissions, which reduces labor and cost. The tracking system is also an integral part of the TRIM system that is more efficient and supports automated functions.

Chapter 4
Federal Data Capture Function

PURPOSE

The purpose of data capture is the rapid data entry of "as submitted" facility and chemical information into the TRIM database. Inconsistencies, potential duplicates, omissions, or errors are flagged for verification and validation during data reconciliation. Facility information is collected from Part I of Forms R and A (see Appendix D for facility data elements), and chemical information is collected from Part II of the forms.

DESCRIPTION

The four data capture activities for paper Forms R and A submissions and revisions, paper miscellaneous, magnetic media submissions and revisions, and trade secret submissions are discussed in the following subsections.

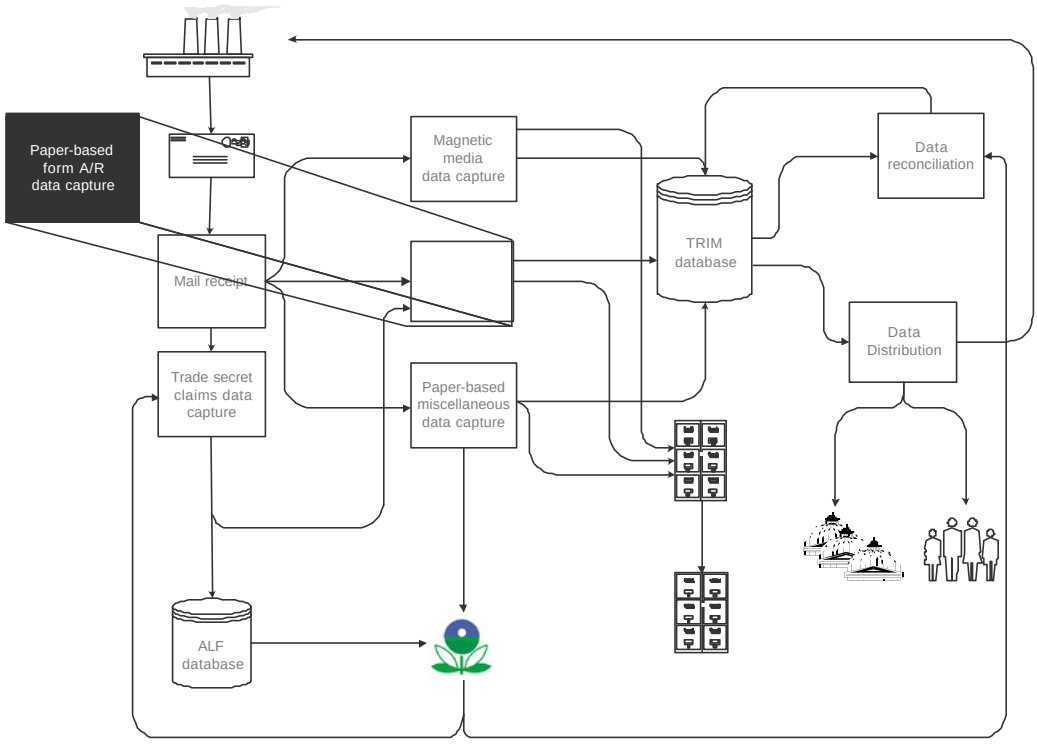
Data Capture of Paper Forms R and A

Figure V-4-1 highlights the paper Form R and A data capture function in the TRI process flow. The steps of the data capture function are shown in Figure V-4-2. From the mail receipt processing, the following tracking numbers are attached to paper Form R and A submissions:

- A number for the envelope
- A submission number for each Form R and A contained in the envelope
- DCN for each chemical reported on a form.

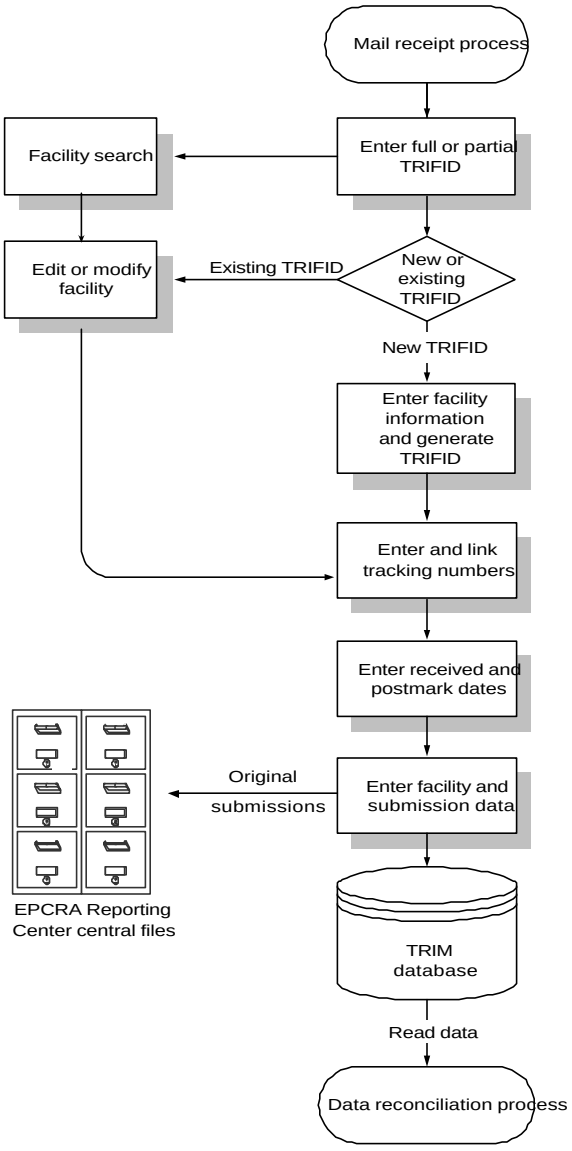
These tracking numbers are entered, with received and postmark dates, and linked to a facility identifier known as the TRI Facility Identification Number (TRIFID). The TRIFID, reported by the submitter on the form, is compared to existing facility data and entered if they match. (A TRIFID consists of a 15-digit identifier composed of the zip code, the first five letters of the facility name, and the first five characters of the facility address). An attempt is made during data capture to make a reasonable match or obtain sufficient facility information (e.g., zip code), but final resolution is made during data reconciliation. After discrepancies are resolved, new data are added to the existing facility records using the existing TRIFID and the facility identification. If no TRIFID is provided, a new one is created using existing facility information.

Figure V-4-1. Overview of Paper Forms R and A Data Capture Function in the TRI Process



Each chemical reported is linked to the TRIFID by the DCN. The number can be manually entered or a barcode scanned into the system. Data incorrectly submitted (e.g., CAS number) are entered as submitted, and "invalid" is displayed for later reconciliation. After the data have been captured, the paper copies are routed to the central file room for storage.

Figure V-4-2. Functional Steps of Paper Forms R and A Data Capture



Data Capture of Miscellaneous Documents on Paper

Highlighted in Figure V-4-3 is the data capture function for miscellaneous documents on paper. Figure V-4-4 presents the functional steps. The processing is similar to the processing of paper Forms R and A. However, less data are associated with the miscellaneous submissions; therefore, less processing is involved. Like all mail pieces, miscellaneous submissions enter the reporting center, are tracked by the RMS module, and are entered into the TRIM database. From mail

receipt processing, the paper miscellaneous is prepared with the following tracking numbers:

- A number for the envelope
- A number for submission withdrawal requests, notifications, and correspondence.

The tracking numbers are entered into the RMS and linked to appropriate facilities. Copies of submission withdrawal requests are forwarded to the EPA headquarters for a decision. Other miscellaneous submissions do not require an EPA decision or review. Information from requests, notices, and correspondence are entered into the TRIM module and captured in the TRIM database.

If the EPA approves the submission withdrawal request, the submission is flagged as "withdrawn," which inactivates the submission in the TRIM database. The withdrawn status preserves the electronic audit trail for enforcement and compliance requirements. Alternatively, if the EPA disapproves the request, the submission remains active, and no further processing is required. In both cases, the data reconciliation processing for miscellaneous submissions is minimal.

Figure V-4-3. Overview of Paper Miscellaneous Data Capture Function in the TRI Process

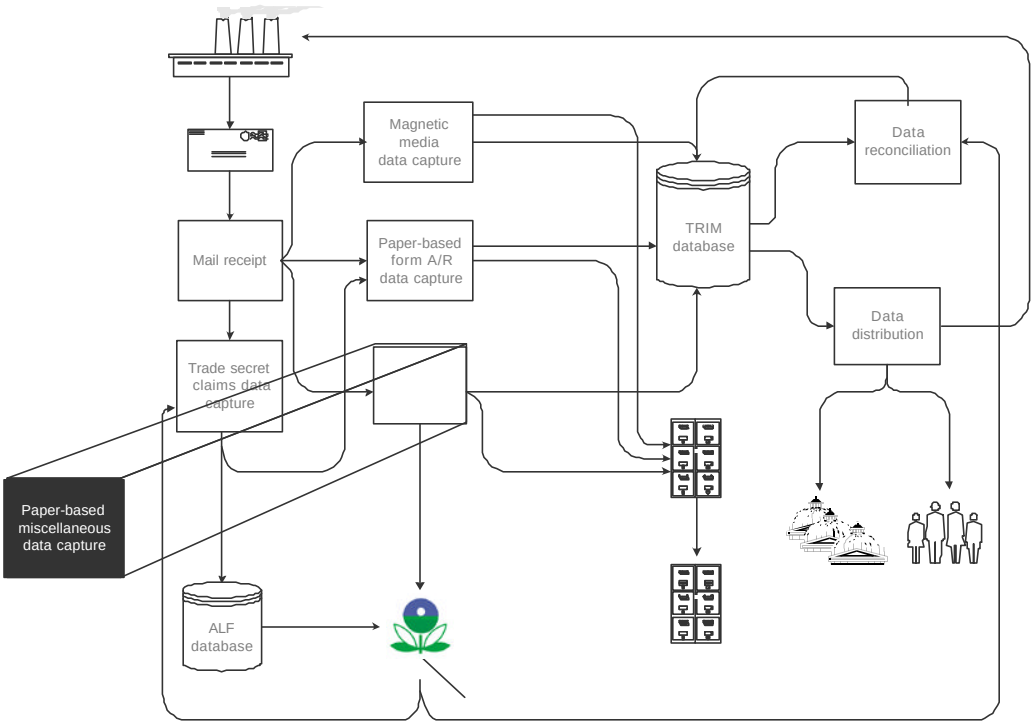
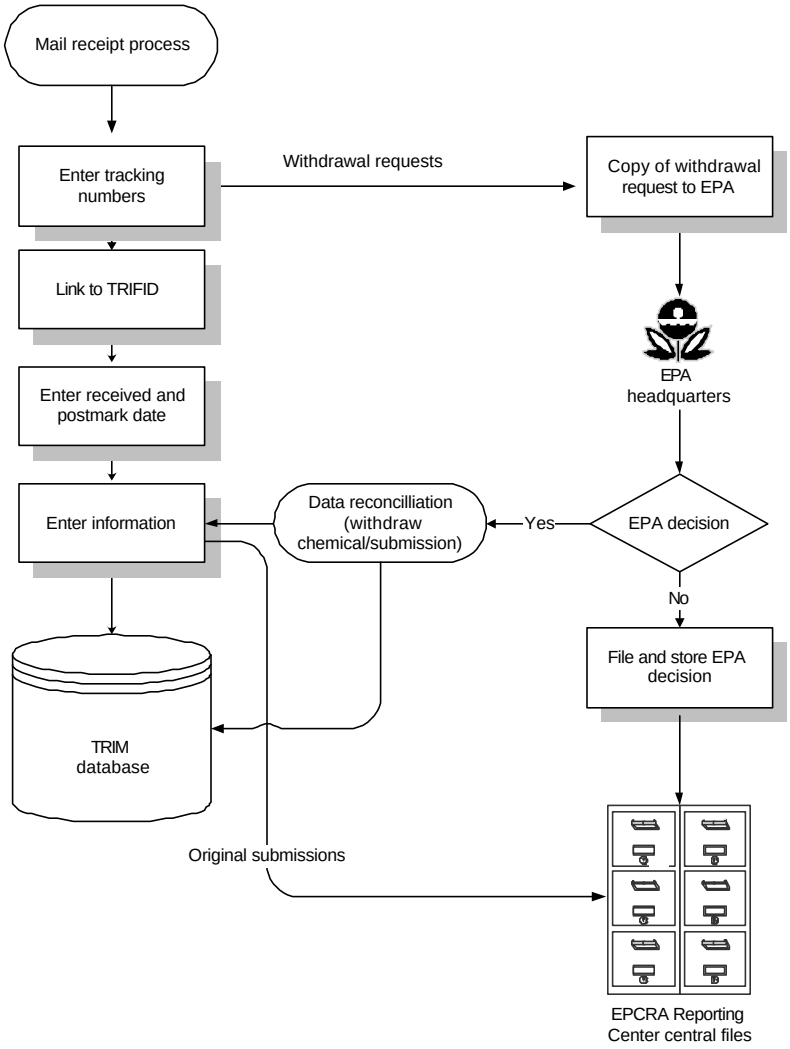


Figure V-4-4. Functional Steps of Paper Miscellaneous Data Capture



Data Capture of Forms R and A on Magnetic Media

Figure V-4-5 highlights the data capture of magnetic media, and Figure V-4-6 displays the functional steps. Most magnetic media submitters use the ATRS to prepare a 3.5-inch diskette. However, some submitters use their own proprietary software that meets EPCRA requirements.

From the mail receipt processing, the magnetic media Forms R and A are prepared with the following tracking numbers:

- A number for the envelope
- A number for the diskette
- A diskette folder number for the accompanying cover letter.

The tracking numbers as well as received and postmark dates are entered. The diskette is scanned for viruses and readability. If a disk is free of viruses, the submission files are copied to a local database where the files are checked for valid values and omissions. After the validation check, submission files are imported to the TRIM database. If a virus is detected, the disk is cleaned and the files are imported. If the diskette is unreadable (e.g., physical damage, virus that cannot be removed, missing information, or damaged files), it is treated as a bad disk, and the submitter is contacted for a resubmission. The resubmission is assigned a new tracking number.

After the copy process is complete, the accompanying cover letter that lists facility information, the chemicals reported, and the certification signatures of the facility owner-operator is checked to determine if discrepancies exist between the diskette files and the letter. If the submitter does not use EPA software to generate the cover letter, errors are possible (e.g., number of chemicals reported on the diskette may not match the number of chemicals reported on the cover letter). Submission and cover letter records can be edited to add or remove chemical submissions (e.g., submission cited in the cover letter but not present on the diskette is entered). Facility information is also captured from the cover letter, TRIFID, and (if necessary) the envelope. After the data have been captured, the disks and cover letters are routed to the central file room for storage, and the records are available for data reconciliation.

Figure V-4-5. Overview of Magnetic Media Data Capture Function in the TRI Process

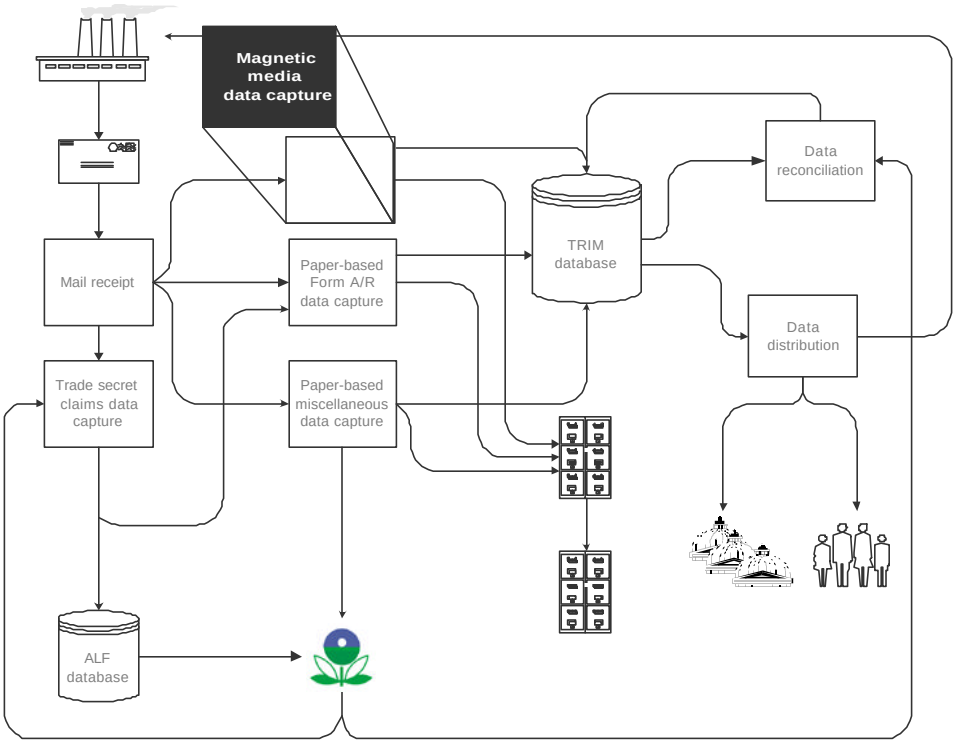
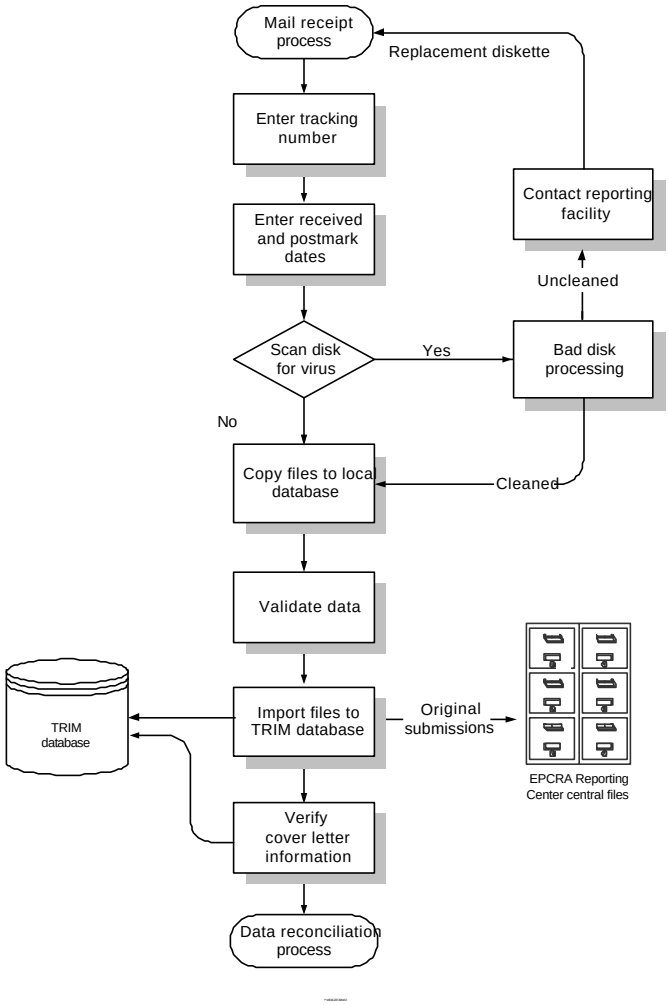


Figure V-4-6. Functional Steps of Magnetic Media Data Capture



Trade Secret Data Capture

The trade secret function is highlighted in Figure V-4-7. Trade secret claims are physically separated from the mail receipt room for secure, independent processing. They are maintained on ALF, which makes sanitized data available for standard paper-based processing. Sanitized data are first entered into ALF (a separate trade secret system), then introduced into the TRIM database, and essentially treated as a standard paper-based submission.

The public and private Forms R are processed into the ALF, and the substantiated and unsubstantiated forms are only retained on paper in the trade secret library at the EPCRA Reporting Center. The standard submission and trade secret data capture have the following key differences:

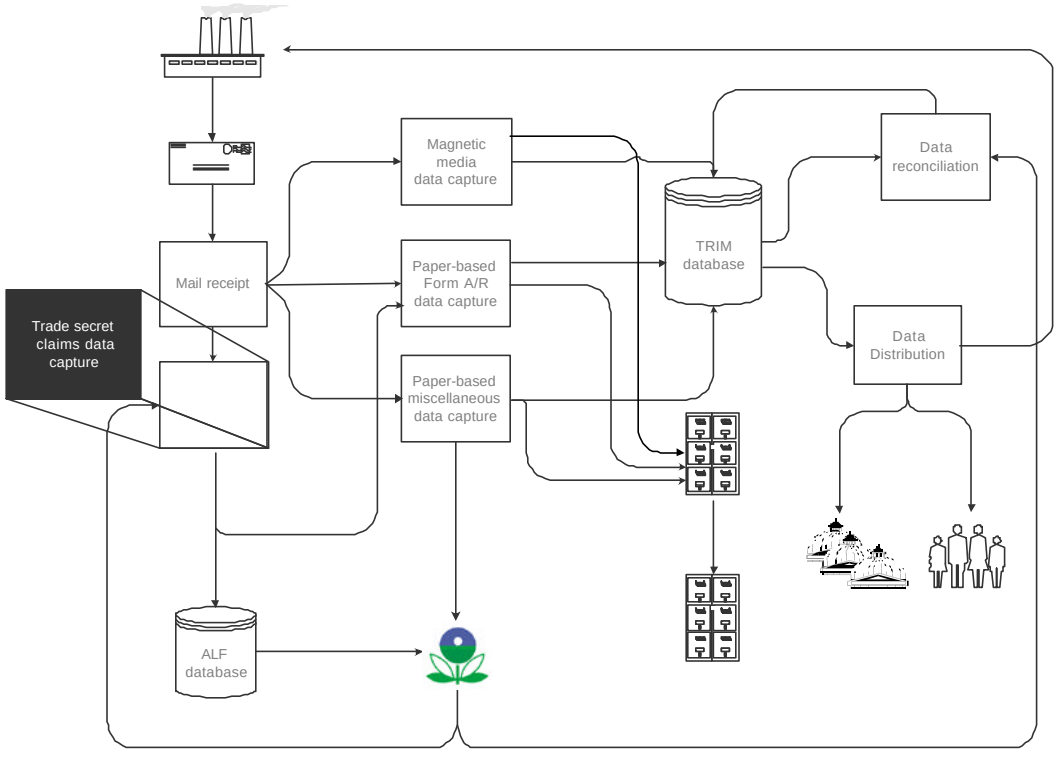
- No double keying of data
- Different database and system for storing and tracking submissions

- Submitter contact, change determinations, and data validations made by the EPA trade secret manager

- No mail out function associated with the ALF.

The ALF has three steps (i.e., screens) for data entry and read-only functions. In the first step, trade secret claims are prepared with tracking numbers in the mail receipt processing. The tracking numbers are entered to link a physical submission to electronic data capture. The received date, postmark date, and facility information (e.g., TRIFID, facility address, and mailing address) are entered and linked to the tracking numbers. The second step accepts the chemical information, such as CAS numbers and generic chemical names. After the sanitized Form R data have been entered in ALF, they are queued for processing in the TRIM database. The third step reviews the status information for the trade secret submission, including sent notices, received notices, withdrawal of claim, and incomplete submission type of information. EPA reviews all trade secret claims involved in data reconciliation and evaluates changes, revisions, and withdrawal requests for trade secret submissions.

Figure V-4-7. Overview of Trade Secret Data Capture Function in the TRI Process



AUTOMATED DATA PROCESSING SYSTEM

The data capture function has been integrated into the TRIM system. The expectations are improved efficiency through automated checks and functions that result in quicker data processing and better data quality. Both media benefit from the TRIM system, but magnetic media data capture gains the most benefits from the integrated system.

The TRIM module is used for the paper-based data entry. Despite system improvements, manual data entry is still required and takes up to five times more processing time than the time for magnetic media.

Magnetic media are processed in the ATRS Copy module, which uses automated features for reviewing and validating submitted data. The data provided on diskette are more accurate and have fewer omissions. As a result, assigning and linking a TRIFID are minor tasks. However, manual processing is required to load and check the diskettes, and review, copy, and upload the data files into databases.

Chapter 5
Federal Data Reconciliation Function

PURPOSE

The data reconciliation function is a review and reconciliation of data as submitted by the facilities. The purpose of data reconciliation is to eliminate duplication, resolve discrepancies and inconsistencies, and eliminate errors. Paper (including sanitized trade secrets) and magnetic media submission records undergo the same reconciliation.

DESCRIPTION

The data reconciliation function is identified in Figure V-5-1. Figure V-5-2 presents functional steps. The "as submitted" data from the data capture process are read from the TRIM database. The data are checked for potential duplicates, facility information is reconciled, and data are validated and verified to improve data quality of submissions and accuracy of keyed data. After data inconsistencies and errors are resolved, reconciled data are saved to a new table in the TRIM database. The TRIM system also retains the original "as submitted" data table. In the case of inconsistent data or errors that cannot be resolved, a notice (i.e., the facility data profile) is generated and sent to the submitter that highlights the data problem and explains the error and how to correct it (see Chapter 7 for a discussion on mail outs).

Figure V-5-1. Overview of Data Reconciliation Function in the TRI Process

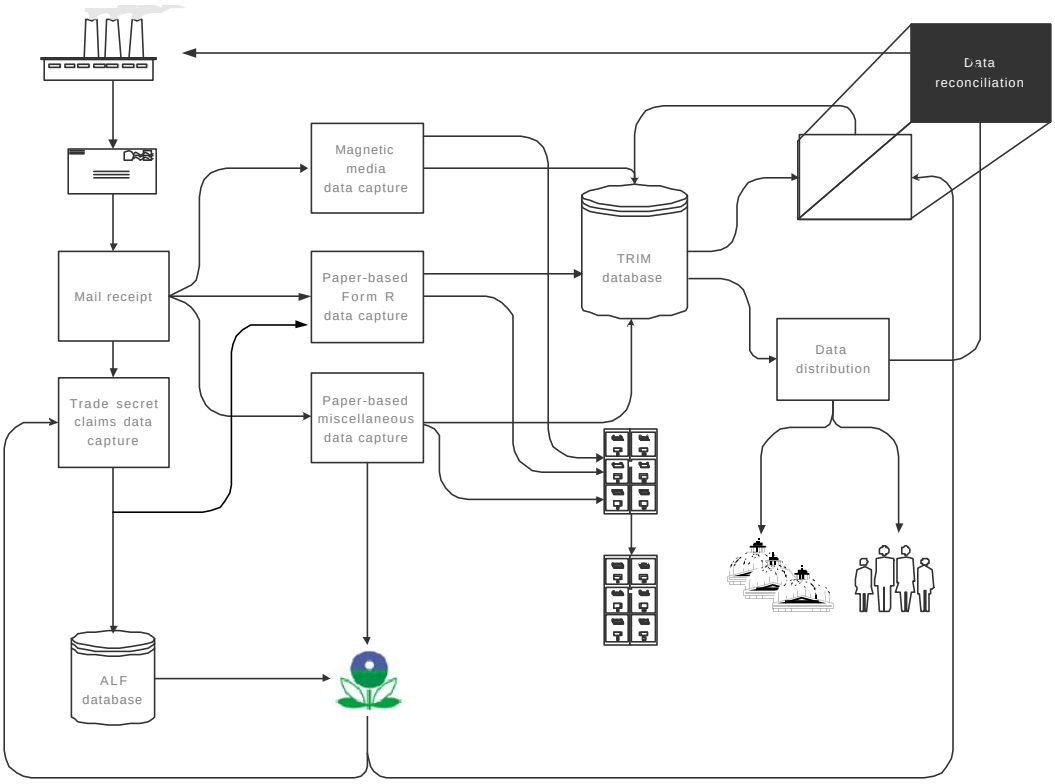
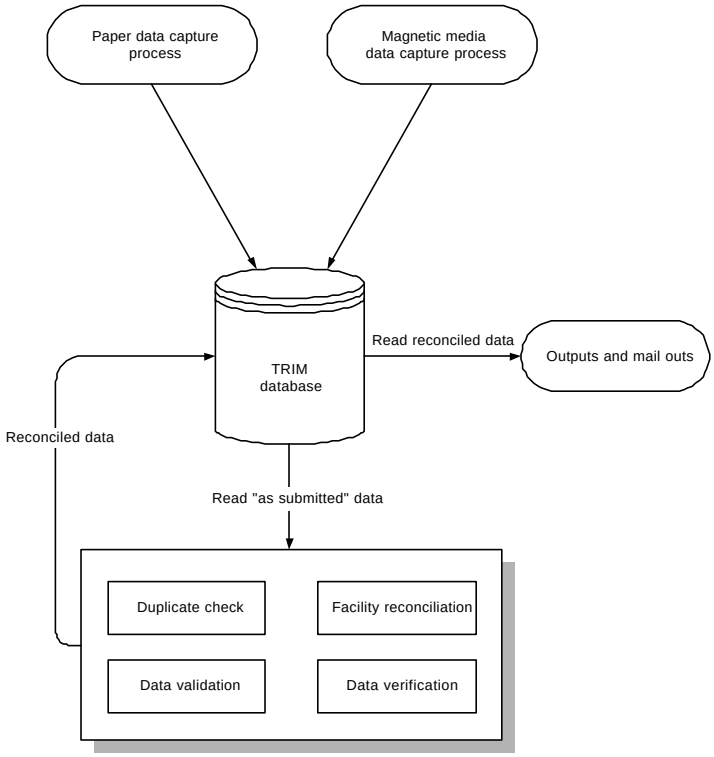


Figure V-5-2. Functional Steps of Data Reconciliation



Data reconciliation consists of four concurrent processes: duplicate check, facility reconciliation of facility information, data validation, and data verification.

Duplicate Check

During the duplicate check, potential duplicates (i.e., submissions identical to other submissions in the TRIM database) are identified, and records that should be activated or deactivated are selected. Potential duplicates are reviewed, and a submission status is assigned to each record: inactive, active, duplicate review needed, withdrawn pending EPA approval, and withdrawn. (Duplicates may be caused by several reasons that include misidentification of a facility, a chemical reported with different activity and usage codes, and submission of both paper and magnetic media for the same reporting year.)

Duplicate check processing is performed by an algorithm in the TRIM system that compares the facility, chemical, and reporting year information to previous submissions to identify revisions or potential duplicate submissions. The facility is identified by a unique identifier and facility identification to resolve multi-establishment submissions or subordinate facilities reporting under a single TRIFID. Chemical information includes CAS chemical identification, generic chemical name, and chemical mixture information.

Both submissions are maintained in the database and sorted by date, form type (including cover letters), media type, and the order they are entered in the system. The appropriate records are activated or deactivated using the following duplicate checking rules that apply to most duplicate and revision situations:

- A more recent submission is typically activated over a previous submission.
- Form R submissions are generally activated over Form A submissions received for the same reporting year.
- Magnetic media submissions are generally activated over paper submissions.
- Otherwise, the last loaded or entered submission is activated.

Submissions not resolved by the duplicate check process are reviewed to determine submissions that contain the most recent information. To aid in the review, almost all submission data can be displayed in a stacked row or on a split screen, and differences can be automatically highlighted. The active submission continues through the data reconciliation process.

Facility Reconciliation

Facility reconciliation compares the facility information submitted (e.g., name address, zip code, TRIFID) with master facility records in the TRIM database. The facility identification is used in addition to the TRIFID. Inconsistencies are automatically highlighted in a split screen comparison of submitted records and master records in the TRIM database. To resolve inconsistencies and errors, prior submissions are reviewed, or the technical contact is called if no historical information is available. If the error or inconsistency is not resolved, the submission is identified as "invalid," and a notice is sent to the submitter for resolution (see discussion on mail outs in Chapter 7).

The following scenario illustrates potential inconsistencies encountered and reviews performed during facility reconciliation. A facility reports the name of "ABC Construction" in its first submission. The following year it omits the TRIFID and provides a new facility name of "ABC Sons Construction." During data capture of the second-year submission, the facility is assigned a new TRIFID but is also flagged for facility reconciliation because the facility identification and record in the system master record do not match. Records for both submissions are reviewed. They are found to be nearly identical; however, it is not clear if the owner of the facility has changed (the Dun and Bradstreet number does not indicate a change in owner). The technical contact is called, and the facility name is corrected to that provided in the second-year submission.

Data Validation

The data validation process is a quality assurance measure implemented in 1989 by the EPCRA Reporting Center. The goal is data refinement through quality assurance activities. The raw data review is performed primarily throughout the data capture function. Data validation is another level of review to improve data quality. It focuses on more than the accuracy of the electronic representation of the original submission.

Data validation identifies errors or inconsistencies in paper or magnetic media submissions. Records are identified that have major errors that prohibit further processing (e.g., incorrect or incomplete forms) and less severe errors that violate semantic or referential rules in the TRIM database (e.g., invalid codes, absence of data, field anomalies) but do not preclude further data processing. Records are also identified for inconsistencies (e.g., disagreement between CAS and chemical name), year-to-year changes in release quantities that exceed a reasonable percentage, excessively high or low values, and gaps in reporting.

After the error has been identified, an attempt is made to resolve it using queries, historical information, or informal contact by telephone with the submitter. If available, 2 to 3 years of historical data are reviewed from aggregate reports and trend analysis. If the error is not resolved, it is identified as "invalid," and a notice is sent to the submitter for resolution (see mail out information in Chapter 7). The notice also provides final confirmation of reported releases for a facility in the database.

Data Verification

The data verification process is an interactive task, which requires 5 to 10 minutes to complete. It is a review by section of data fields in two columns, the "old" and the "new." The old column contains the data from data entry during data capture, and the new column contains the double-keyed data from data verification.

A screen in the TRIM module displays a table with the new and the old columns (Appendix E provides an example). The two columns are compared for consistency. Conflicts between the new and old values are reviewed, and the correct value is accepted. This process significantly reduces data entry errors that occur from the paper-based data capture process.

In addition to verification activities, three reports are available from the data verification process. They are production total, production rate, and error rate per submission. The reports and other statistical information can be extracted from the data verification process for analysis and reporting to the EPA.

AUTOMATED DATA PROCESSING SYSTEM

The data reconciliation processing is performed in the TRIM system for both paper and magnetic media. Most manual checks of data elements have been converted into interactive processes that should reduce errors and improve efficiency. Screen displays have been designed with side-by-side table screens for easier, automated reviews.

The paper processes of data capture and data reconciliation have been integrated in the TRIM system, and more data quality checks are performed in the paper data entry process. In general, a task that consists of more than entering the "as submitted" data can be considered a part of the data reconciliation process.

Chapter 6
Federal Archive

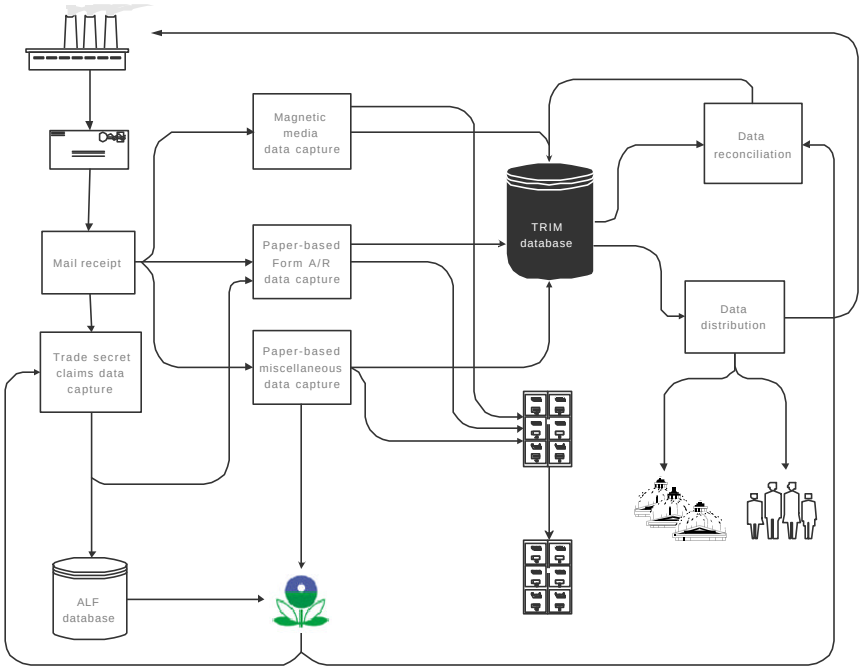
PURPOSE

The purpose of the submission archive function is to ensure that the EPA meets the requirement to retain original submissions from 1987 to the current reporting year.

DESCRIPTION

Paper, magnetic media, and trade secret submissions are located and checked in and out of original submission storage and electronic storage locations using a unique tracking number in the RMS module of the TRIM system (Appendix C). Figure V-6-1 depicts an overview of the TRI process flow that traces the submission from entry to storage in original and electronic versions. The original submissions enter the processing stream in the mailroom, go through mail receipt and one of four data capture processing streams, and are placed in the reporting center's central files. Two versions—the original submission and an electronic representation in the TRIM Oracle database—are maintained.

Figure V-6-1. Overview of Archive Function in the TRI Process



Original Storage

Submissions are physically stored at the EPCRA Reporting Center, and the burden of storing thousands of TRI submissions is shared with the FRC of the National Archives and Records Administration. The EPCRA Reporting Center maintains magnetic media submissions for all current and prior years. Diskette degradation has not occurred but may be a future concern. All trade secret submissions and current-year submissions are retained in the central files at the reporting center. Prior-year submissions are stored at the FRC.

Original paper submissions are retained to meet potential enforcement action needs (see Chapter 9 for enforcement issues). OECA or other EPA program offices request original paper copies for review.

Electronic Format Storage

Electronic storage activities occur continuously from the point of mail receipt with the tracking numbers to revisions and modifications that occur after the initial submission data capture. "As submitted" data are captured for electronic archiving. The tracking numbers identify the submissions and provide information on their locations. In most cases, the electronic version is used to review and analyze a submission. Only OECA or EPA headquarters may review original submissions.

All submission data from 1987 to 1997 have been migrated into the TRIM database at the EPCRA Reporting Center. Although electronic representations of the original diskette submissions are stored, the original submissions may not be retrievable. The revision and duplicate submission data from 1987 to 1993 were purged from the database because of technological shortcomings, such as disk space shortages, that prevented the preservation of originally submitted data.[1] As a result, original paper and diskette submissions are not in the database (i.e., the "as submitted" data are not available for reporting years 1987 to 1993).

AUTOMATIC DATA PROCESSING SYSTEM

The RMS module of the TRIM system tracks and locates both electronic and original versions of the submissions. The two functions of tracking and electronic storing are fully integrated in the TRIM system. The system has automated the submission logging and tracking tasks. For magnetic media, the task of assigning DCNs, TRIFIDs, and facility identification has been automated. The TRIM Oracle database supports the current and future electronic data storage and tracking requirements. The task of physically taking inventory may still be necessary, but the RMS module should be more efficient and cost-effective.

[1] Interview with EPCRA Reporting Center staff, April 19, 1999.

Chapter 7
Federal Data Distribution

PURPOSE

One primary purpose of the EPCRA Reporting Center is to provide TRI data to the public and private sectors. The data are released to *Envirofacts*, a data warehouse that meets the regulatory requirement of providing and making TRI data available for public and private use.

DESCRIPTION

The data distribution function is highlighted in the TRI process in Figure V-7-1. The functional steps are presented in Figure V-7-2. The refined, reconciled data are read from the TRIM database. From the data, outputs are generated and uploaded to Envirofacts and transferred to the RTK NET and GPO via File Transfer Protocol.

Other types of data distributed from the TRIM database are reports—the facility data profile report and system reports. A facility data profile report is generated and mailed to each submitter. This report serves as a confirmation of the received data and notice of data inconsistencies and errors. The second type of report consists of system reports. The data outputs and reports are described in the following subsections.

Figure V-7-1. Overview of Data Distribution Function in the TRI Process

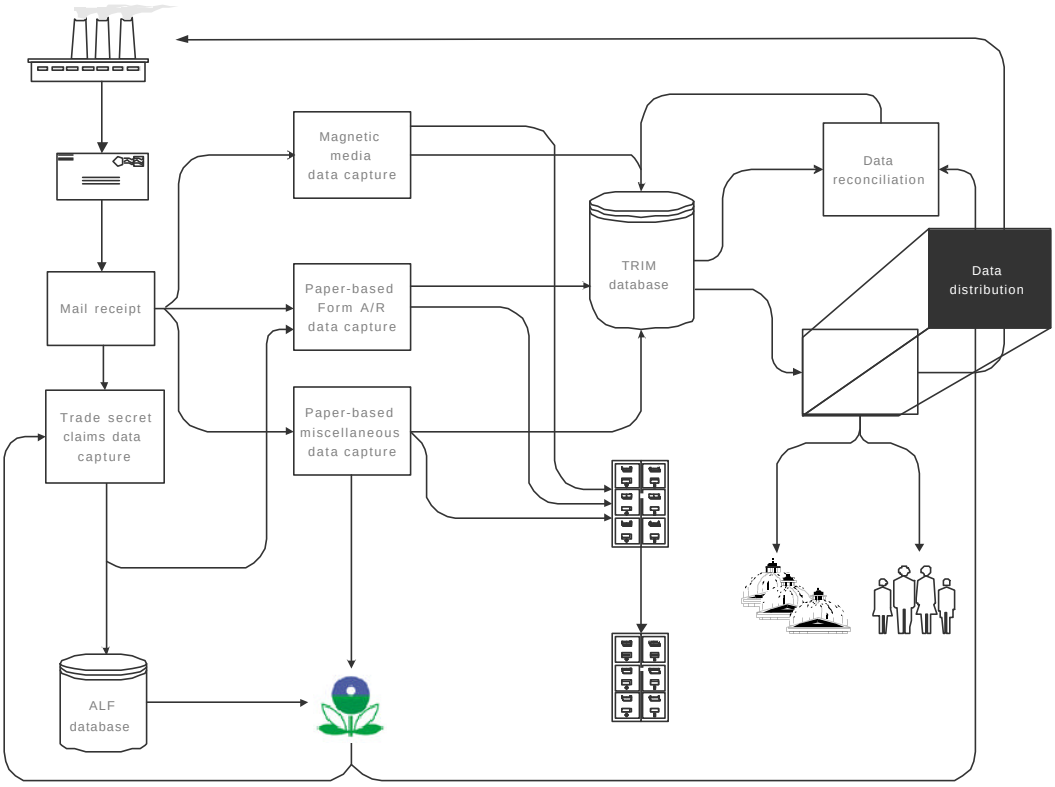
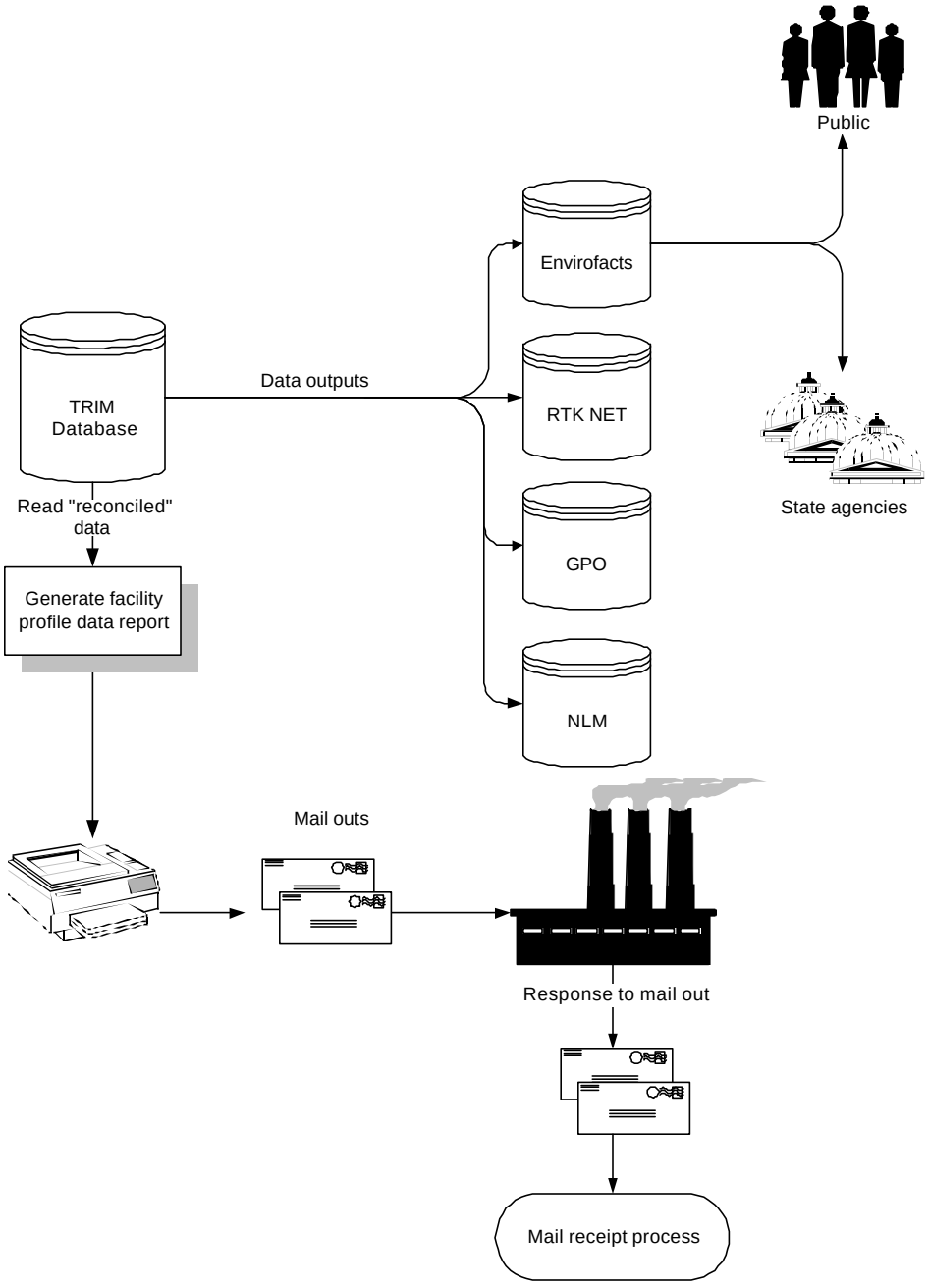


Figure V-7-2. Functional Steps of Output and Mail Out



Note: NLM = National Library of Medicine.

Data Outputs

The TRIM database provides data outputs for widespread use by a broad array of constituents. Users of TRI data include EPA program offices (e.g., OPPT, Office of Air and Radiation, Office of Enforcement and Compliance Assurance, Office of Solid Waste and Emergency Response [OSWER], and Office of Water), state

and local government agencies, community and public interest groups, financial and businesses, regulated community, and education and research institutions.

The uses of TRI data range from a risk-screening tool for targeting OPPT's initiatives on pollution prevention to a tool for inspection targeting and enforcement for AIRS, OSWER, and other enforcement activities (see Chapter 9 for a discussion of enforcement activities). EPA's TRI Branch and the EPCRA Reporting Center also use system reports to identify possible reporting errors, evaluate data quality, and assess the effectiveness of the TRIM system.

The primary data outputs generated from the TRIM database include the following:

- *EPA intranet*. The EPA intranet site contains complete data sets from the TRI database that can be accessed by EPA program offices, EPA regions, and states (previously sent as state data extracts). Access is granted to authorized users. The data sets can also be used to generate a national database and reports requested by a state.

- *EPA Internet*. TRI data are provided to the public through the *Envirofacts* Web site.

- *Data extracts*. Data extracts are sent using a unified file format to the GPO, National Library of Medicine, and RTK NET. The extracts are intended to be available on EPA's Internet site.

Mail Outs

Until the TRIM system becomes fully operational, TRIS will continue to provide the following types of notices to inform and communicate data discrepancies:

- *Notice of Data Change (NDC).* An NDC is issued if a submission contains an unambiguous and correctable error that has been corrected at the EPCRA Reporting Center at the EPA's direction. Submitters do not need to respond unless they disagree with the correction.

- *Notice of Significant Error (NOSE).* An NOSE is issued if a submission contains an uncorrectable, critical error, and the submission cannot be processed without additional information. The submitter must respond within 21 days to avoid an enforcement action.

- *Notice of Noncompliance (NON).* An NON is issued if a submission contains a critical error, and the submitter has not responded to the NOSE. The submitter must respond within 21 days to avoid an enforcement action.

- *Notice of Technical Error (NOTE).* An NOTE lists format errors for each submission and notifies submitters of invalid entries. Reports for all reporting years for submissions are sent to the reporting facilities. Submitters can review the quantities listed and make corrections to the information in the database.

- *Release Value Report (RVR).* An RVR lists all releases, transfers, and PPA data quantities for each submission. Reports for all reporting years for submissions are sent to the reporting facilities. Submitters can review the quantities listed and make corrections to the information in the database.

Of the more than 96,000 submissions in the 1997 reporting year, approximately 10,000 to 15,000 contained critical errors (e.g., no chemical name, incomplete submission). As part of contacting submitters, approximately 300 NDC and 300 NOSE were mailed out. Submitters provided 100 percent response to the NOSE, and NON was issued. An 80 percent voluntary response rate to the NOTE helped correct noncritical errors. The notices listed above are being consolidated in the facility data profile report.

The EPCRA Reporting Center also mails out reporting instructions and the most recent version of ATRS. ATRS is mailed by the EPA in March each year to reporting facilities that reported in the previous 2 years. The mail outs contain a compact disk with ATRS and a printed copy of the reporting and instruction manual. ATRS can also be downloaded from the EPA TRI Web site.

Facility Data Profile Report

As submissions are processed, errors are tracked if submissions have incorrect or missing information, such as incorrect chemical, missing CAS number, or mismatched CAS number. Submissions are flagged with tracking errors, and the submitter is sent a notice depending on the review or information needed to reconcile data and improve data quality.

In the TRIM system, the TRI notices have been redesigned to give reported data in a printout format for the submitter to confirm or contest and provide notification of data discrepancies. The facility data profile includes the following information:

- *Cover letter.* The letter describes the purpose of the notice, the information in the report, the significance of error messages, how to respond, and potential consequences of not correcting critical errors.

- *Facility profile.* The profile provides facility data (e.g., TRI facility identification, facility name, address, permit, SIC code).

- *Subordinate facility data.* If applicable, data for multi-establishment or subordinate facilities are provided (e.g., subordinate facility sequence number, name, address, technical contact name, public contact, permit information).

- *Chemical profile.* All chemical submission data are listed (e.g., chemical name and release, transfer, and PPA information).

- *Validation messages.* Validation or data errors are highlighted as "invalid" (e.g., invalid SIC code, "out-of-bound" NPDES or RCRA value, invalid latitude and longitude values, invalid CAS number, misspelled chemical name, incomplete form, invalid transfer code, missing PPA data value if a corresponding release and transfer value are present). Magnetic media submitters receive information on diskette discrepancies or failures (e.g., unreadable, missing files).

- *Summary.* A summary of chemical reports submitted for a reporting year and current status of the data are provided with information on earlier notices (e.g., notice type, date issued).

All identified errors, whether critical (i.e., previously in the NOSE) or noncritical (i.e., previously in the NOTE), are flagged or highlighted as "invalid" in the profile to help the submitter recognize and respond to the data errors. The submitted data in question are listed with a message explaining the error and how to correct it. Any response to the notification, whether adequate or inadequate, is indicated in status and production flags. New data that are inadequate are represented as "invalid."

After production data quality checks for possible data capture errors, this information is made available to the public unless the submitter makes the correction. A NON can be issued for submitters that fail to respond within 21 days to the profile notice for correcting critical errors.

System Reports

The TRIM system can generate reports from the TRI database for the EPCRA Reporting Center to use in identifying possible data errors or compliance issues, reconciling data, and evaluating submission processing. The system design allows a variety of queries to be viewed online. Some reports are used internally by the EPCRA Reporting Center and EPA program offices. The reports include the following:

- *Ad hoc report.* Up to 14 ad hoc reports can be made as intermediate outputs during data reconciliation or on request from EPA. These queries are made using the Data Browser module that views all facility and submission data online.

- *Trend analysis report.* A trend analysis report can be generated to identify large variations in release or transfer values for facilities during reporting years and facilities that reported in some years but not for other years. The report can be used to identify errors in the data capture as well as errors and compliance issues for reporting facilities. The report summarizes several queries for selected facilities that include ranking and providing ratios of reported values for year-by-year comparisons.

- *Data quality review report.* Data quality review reports are generated to identify possible data or reporting errors (e.g., invalid zip code, NPDES number, certification signature, waste treatment method code, out-of-range release values).

- *Data administration report.* Workflow information (e.g., number of forms processed, processing and transaction times) can be generated to evaluate the effectiveness of submission processing.

- *Security information.* Although security information is not available as standard output, information is available to ensure that security measures are maintained for system access and data integrity.

File types and formats for ad hoc, trend analyses, data quality, and data administration reports vary depending on the queries made. Specific files included depend on the information requested.

Chapter 8
Federal Information System Function

PURPOSE

The purpose of the TRI information system function is to support data processing and submission tracking and storage. It also serves as a tool to collect, organize, and report TRI data.

DESCRIPTION

An integral part of the federal TRI program is the operation and maintenance of the information system. This support function includes the following:

- Hardware acquisition, installation, and maintenance
- Software development, enhancement, and maintenance
- System integration and standardization
- Magnetic media development, enhancement, and maintenance
- Change control and procedure development
- Operational system support
- User support
- Training
- Software testing and documentation.

Hardware Acquisition, Installation, and Maintenance

The TRIM system was phased in 1999 to replace TRIS, the legacy local area network (LAN) database. The TRIM system uses an Oracle relational database to maintain and manage the TRIM database. The Oracle platform uses a computing architecture that is comprised of data servers and application servers that store and process information. The Oracle platform includes database management systems and development tools that enable users to create, retrieve, and modify data stored in the database. Business applications automate data processing functions.

Hardware acquisition, installation, and maintenance are being implemented as parts of a hardware management plan. The plan manages hardware for TRIS and the new TRIM system. The purpose of the plan is to ensure that supporting equipment is acquired and maintained in a condition that enables unimpeded data entry and production processing. The plan includes the following:

- *Configuration and acquisition* include developing a system configuration plan that describes the physical layout of all components of the LAN, data entry hardware, and other hardware added during TRIM implementation; managing system configuration and all modifications or enhancements to the hardware configuration; evaluating and recommending new or modified technologies that affect the LAN platform; providing a justification for hardware acquisition; and acquiring new equipment for the replacement and repair of defective or outdated hardware and for TRIM system installation.

- *Installation* consists of installing and testing new and replacement hardware and hardware upgrades, and integrating operating systems, production software, and hardware.

- *Maintenance* includes the implementing a hardware preventative maintenance program, performing diagnostic testing to determine if equipment is operating properly, and managing needed replacement and repair of defective or outdated hardware.

Logs are maintained for system availability, usage, maintenance performed, and changes to hardware.

Software Development, Enhancement, and Maintenance

Software development, enhancement, and maintenance provide comprehensive services for the life cycle of the TRIS and TRIM system. The activities for system software development, enhancement, and maintenance include the following:[1]

- *Planning* includes benefit-cost analysis, concept studies, needs assessments, requirements analyses, feasibility studies, options analyses, and determination of life-cycle costs.

- *Analysis* consists of a detailed analysis of EPA's information processing requirements as they relate to EPA's and OPPT's mission and activities, and an evaluation of current information systems. The analysis and evaluation include preparation of logical data models, entity-relationship diagrams, functional models, data flow diagrams, association matrices, action diagrams, and system specification and requirements documents.

[1] Environmental Protection Agency, Statement of Work and Deliverables for the EPCRA Reporting Center Project, August 26, 1999.

- *Design* builds on the analysis to design systems and define data and functional specifications. Design activities include preparation of external design descriptions (e.g., screen and report layouts, systems flow diagrams, dialogue flow diagrams, and prototypes); preparation of internal design descriptions, including detailed design specifications, design of user codes, and physical database design; preparation of structure charts, pseudo code, data structure diagrams, and data navigation diagrams; and development of procedures for system administration, including security and backup recovery.

- *Development* includes hardware and software installation, writing or generating software, construction of databases, preparation of suites of test data, conducting unit and system integration tests, and preparing system administration manuals.

- *Implementation* consists of moving the system into full production status. System implementation includes installing and testing hardware and software, loading databases, identifying system problems and resolutions, training users, and conducting user acceptance testing.

- *System maintenance* includes analyzing and resolving system problems, modifying the system to accommodate regulatory or environmental changes, enhancing software performance to meet user needs, supporting users through training and consultation, and documenting changes to the system.

- *System retirement* primarily consists of the orderly closeout of a system and disposition of all system components. Retirement may include notifying system users of expected changes, archiving all products and data, and disposing of system hardware and software.

Maintenance and enhancement of the established TRI system involve responding to reported problems by EPCRA Reporting Center processing staff, production problems and the user community, new regulatory requirements, and new user or technology requirements.

System Integration and Standardization

Most of the TRIM system design and development was performed as system integration and standardization. After the system is fully implemented, it will be maintained and enhanced as part of software development, enhancement, and maintenance. During the preparation of this report, the core functions and software applications of the TRIM system were observed; however, parts of the system are still being developed. Consequently, the system and functions described represent the TRIM system as it is being developed.

The TRIM system consists of three modules that perform the core functions of the TRI process: the RMS module, the ATRS Copy module (see the next subsection for a discussion of ATRS), and the TRIM module. The *RMS module* logs and tracks submissions received by mail and tracks submissions during processing by file numbers. The *ATRS Copy module* copies files from diskette submissions into the database. The *TRIM module* includes the following submodules for processing submissions:

- *Data Entry* captures and validates the initial data entry of paper submissions and captures submission tracking information used by other modules.
- *Dupe Check* marks potential duplicate submissions.
- *Facility Reconciliation* identifies and reconciles errors in reported facility information and standardizes facility data.
- *Data Validation* identifies errors in submission forms, generates a code for each error, and prepares data for mail out notices with error descriptions to the submitter.
- *Data Verification* verifies data entered in the database.
- *Data Browser* queries and sorts the database for read-only and reporting purposes.

System integration and standardization for the established TRI system also consists of providing extracts of data from the established TRI system in specified media and formats, and assisting other EPA contractors in understanding TRI data and file structures.

Systems integration and standardization for developing the TRIM system includes developing a users requirements plan; developing proposed system solution and recommended alternative documents; developing a design document; implementing the design of the TRIM system; developing prototypes of segments of TRIM applications (RMS module, ATRS Copy module, and TRIM submodules); developing a test plan for system integration, functional and subsystem testing and integration, and software and communications testing; developing database reports for Form R and A; developing uniform as well as unique data structures (national and state); updating LAN software to correct Automated Form R (AFR) anomalies; and developing software programs to prepare letters and mailing labels and transfer data to *Envirofacts*, NLM, RTK NET, and GPO.

Magnetic Media Development, Enhancement, and Maintenance

EPA continues to develop, maintain, and enhance the suite of EPA software for submitting Form R and Form A in electronic magnetic media format. The

software consists of ATRS used by submitters for making magnetic media submissions and UTIL used by states and reporting facilities to create master databases of submissions on ATRS diskettes. Software development, enhancement, and maintenance activities for ATRS and UTIL include the following:

- *ATRS magnetic media software* activities include developing, documenting, and distributing new versions of the software and providing technical support. EPA supports the following versions of ATRS (previously referred to AFR): DOS; Windows 3.1; Windows 95, 98, and 2000; and Windows NT. The EPCRA Reporting Center also certifies users' proprietary software. ATRS is mailed by the EPA in March each year to reporting facilities that reported in the previous 2 years. The mail outs contain a compact disk with ATRS and a printed copy of the reporting and instruction manual. ATRS can also be downloaded from the EPA TRI Web site.

- *UTIL software* activities include developing, documenting, and distributing new or enhanced versions of the UTIL software and providing technical support. The EPA supports a DOS version of UTIL and is developing a Windows-based version. The UTIL software can also be downloaded from the EPA TRI Web site. ATRS is also modified to provide UTIL capabilities. A user beta test is performed on the new ATRS software to identify, analyze, and resolve problems. EPA distributes the software to state offices and other facilities that use the UTIL software.

Technical support for the ATRS and UTIL software includes responding to user questions, providing user training, developing training materials, and providing demonstrations. Technical assistance is also provided to the states to help ensure compatibility between UTIL software, the enhanced ATRS software, and the computer system and software package of the state database.

Change Control and Procedure Development

To make sure that changes in software and hardware in the TRIM system do not impede data processing and production, the EPA has a process for ensuring that changes made to the TRIM system are managed and controlled. All changes are reflected in appropriate documentation.

Procedure development consists of periodically reviewing and revising existing procedures and developing new procedures for the information system support functions as well as the core processing functions. Procedure development is linked to the change control and configuration management for software activities.

Operational Systems Support

Operational systems support consists of system backups, system software installation and virus scans, system uploads, status and ad hoc reports, and data administration.

- *System backups* consist of backing up both production and administrative systems, and daily and weekly verification of backup file contents. Special backups are taken at major milestones or significant events, or on request from the EPA. A log is maintained of all backups, and library of backup tapes, cartridges, and other data storage media is maintained for onsite and offsite storage.

- *Software installation and virus scans* consist of installing commercial or developed software, performing virus scans during installation, and deleting files as directed by the EPA.

- *System uploads* consist of uploading data from the LAN system to *Envirofacts*.

- *Status and ad hoc reports* consist of reporting on operational support and network management activities daily, weekly, and monthly. Ad hoc reports are generated for analyzing data and evaluating system performance.

- *Data administration* includes managing password security on the LAN and the TRIM system applications and maintaining user identifications (IDs), accounts, and access controls for the LAN.

Operational support also includes troubleshooting of user functions (e.g., software applications, printing, and LAN access), assisting users in installing software and testing and using TRIM software, performing routine virus scans, assisting in developing new procedures, moving and relocating equipment, and managing proper system configuration. A software inventory is also maintained and updated to reflect newly purchased software.

User Support

Support services to the TRIM and ATRS user communities are provided by answering questions, responding to requests for documentation, and providing help for national implementation, operation, and maintenance of the system and software. User support services include operating a user “hot line,” logging all user requests, updating the question and answer document, performing ad hoc requests and special projects, and providing other user support.

- *User hot line.* A user “hot line” is operated during business hours, and messages can be left after hours on weekends and holidays. User support

responds to requests received by interoffice, U.S., and electronic mail; facsimile; and the EPA headquarters' answering machine. Initial requests are usually addressed within 1 business day of receipt. The majority of the calls are received in May and June. Approximately 2,500 to 3,000 calls are received annually. Approximately half are repeat callers.

- *Logging requests.* Each request is tracked from receipt until its resolution, and reports are provided to EPA on a weekly, monthly, quarterly, and annual basis that summarize the following types of requests: general assistance and documents requested, ad hoc searches, and ATRS assistance.

- *Updating question and answer document.* Questions from the user community about the ATRS applications are collected by the user support group for incorporation into a question and answer document. The document describes the most commonly asked user questions and issues as well as workaround or standard resolutions.

- *Ad hoc requests and special projects.* Queries of the TRI database are made for ad hoc information requests from users. Special projects include documentation support, research, and telephone notification to submitters.

Training

Training support is provided for EPA headquarters, EPA regional, state, and EPCRA Reporting Center staff members.[2] Training support includes developing training plans, developing and updating materials, and presenting instruction.

- *EPCRA Reporting Center staff.* Training is provided for all operational areas, including the mailroom, data entry, data reconciliation, mail outs, and storage. Training consists of an overview of the work to be performed and detailed on-the-job-training of processes, procedures, and changes to the database. Training includes an overview of data entry modules; data entry by manual keying, magnetic media, or other electronic means; and identification of trade secret documents.

- *EPA headquarters, regional, and state staff*. Training support for EPA headquarters, regional, and state staff members includes preparing course materials and providing training assistance on the NLM TRI database and the TRIM database. The training provides an overview of the system and steps to access, retrieve, and use information from the TRIM database.

Software Testing and Documentation

Software testing and documentation consist of testing all software that is developed by the EPCRA Reporting Center. Testing involves developing and

[2] During the preparation of this report, training activities had diminished since the beginning of 1999.

implementing standard automated test plans, procedures, and documentation for new software for TRIS to ensure that software changes do not adversely affect user functionality. Standard testing procedures are performed at the unit and integrated levels to ensure that the system and data function in accordance with the documentation, and that the documentation accurately reflects the system. All discrepancies between software and documentation are reported, and a final certification and release report is provided to the EPA before each software release.

Chapter 9
Federal Compliance and Enforcement Function

PURPOSE

The purpose of the federal compliance and enforcement function is to ensure that facilities meet the EPCRA Section 313 requirements for reporting releases and transfers of toxic chemicals. The compliance and enforcement function involves providing additional information to regulatory authorities for compliance review and preparing for audits. In addition, enforcement activities include targeting, inspecting, and pursuing a facility that may be in violation of the TRI reporting requirements.

DESCRIPTION

OECA exclusively performs the compliance and enforcement function. The EPCRA Reporting Center performs and aids this function in a peripheral manner through data reconciliation activities with its primary task of processing TRI data. However, OECA focuses on enforcement but has no processing functions.

Most enforcement actions related to TRI reporting are directed at organizations that file Form R submissions late or fail to report. OECA targets late or non-reporting facilities. Submissions later than 1 year are typically targeted.[1] OECA recently decided to make a greater effort to enforce data quality of submissions. This enforcement likely involves submitters who omit or underreport Section 313 chemicals.

Because current enforcement actions are primarily targeted at late and nonreporting facilities and future enforcement actions will include data quality violations, this chapter discusses the enforcement process and how TRI data are requested for evaluating submission data quality and identifying potential reporting violations. As OECA focuses on submission data quality, the use of TRI data will become the centerpiece of data quality investigations. Therefore, this chapter also discusses issues that will be increasingly important, especially with electronic reporting.

[1] Interview with Tom Marvin, EPA Attorney, and Sam Wiggens, EPA Inspector, May 11, 1999.

Enforcement Process

The process for investigating and prosecuting reporting violations consists of the following steps:[2]

- Inspections, tips, targeting, and reviews of other regulatory submissions (e.g., TSCA, RCRA, NPDES) are used to identify potential reporting violations. TRI information is also used for cases that indicate the use of Section 313 chemicals. Most TRI enforcement actions are initiated by regional offices and often include inspections.

- An inspector usually gathers evidence and prepares a report. The EPCRA Reporting Center provides requested information for certifying the nonreceipt of a TRI form.

- The report is given to a case development officer who creates the legal aspects of the case. Documentation includes received date and certification signature, which can be crucial evidence in building an enforcement case.

- EPA's Office of Regulatory Council reviews the case and ensures it has sufficient basis and merit to pursue.

- An EPA administrative law judge is assigned.

- The complaint is filed, and the organization is notified by letter and other means.

- The defendant has 20 days to respond.

- In most cases (approximately 90 percent), a negotiated settlement is reached and approved by OECA.

- If a settlement is not reached, the administrative law judge hears the case.

- Cases may be appealed to the Environmental Appeals Board (approximately 3 percent).

- Environmental Appeals Board decisions may be appealed to a federal court; the Department of Justice may become involved only after the appeal is made (approximately one case a year).

In 1998, 62 complaints were issued—a decrease from the 179 civil actions in 1994. Most cases are civil with a maximum of $25,000 per violation per day. For violations that occurred after January 30, 1997, the fines are $27,500 per violation per day.[3] Most cases have negotiated settlements. Few cases have large

[2] Ibid.

[3] U.S. Environmental Protection Agency, *EPCRA Section 313 Questions and Answers*, EPA 745-B-98-004, 1998 Revision.

settlements (one settlement was approximately $1 million).[4] False and misleading information and actions are liable for criminal prosecution. Facilities can also be targeted for other inspections by the implication of a violation.[5]

TRI Data Request

Although current and past cases have not extensively used TRI data, TRI data are used to determine late reporting and will be the basis for enforcement actions taken for underreporting, data omission, and other data quality issues. If an information request is made by the EPA and an enforcement case develops, the EPCRA Reporting Center documents all transactions and communications in a memorandum for the OECA Director, who initiates enforcement actions.[6]

In reviewing and developing an enforcement case, OECA requests the reporting history (original submissions and other items in the folder), printouts from diskettes, and internal communications. OECA generally does not use the trend analysis reports.[7]

TRI information is used with other information to determine the need to conduct an inspection and develop an enforcement case. For example, EPA Region 7 also pursues data quality problems by reviewing Forms R. At least 13 states have enforcement authority based on TRI criteria.[8]

Key Issues

In 1997 approximately 60 percent of TRI reports were submitted on magnetic media. As TRI reporting becomes more electronic, the following issues will be increasingly important for developing enforcement cases and ensuring compliance:

- *Security.* For TRI compliance reporting, data submitted and transmitted electronically need to be tied securely to a certified authorizing official and protected from unauthorized access. Submission of trade secret information, in particular, can only occur through secure transmission and will likely require a policy change to implement. Other security considerations include tracking postmark and receipt dates and ensuring that the "as submitted" data have not been altered and are securely stored.

- *Electronic signature*. An authorized signature is required on the certification statement in Part I, Section 3, of Form R that attests to the accuracy,

[4] Interview with Tom Marvin, EPA Attorney, and Sam Wiggens, EPA Inspector, May 11, 1999.

[5] Ibid.

[6] Interview with EPCRA Reporting Center staff, April 19, 1999.

[7] Ibid.

[8] Interview with Tom Marvin, EPA Attorney, and Sam Wiggens, EPA Inspector, May 11, 1999.

completeness, and truthfulness of the data represented (see Appendix A). Current electronic reporting by magnetic media requires a paper-based signature in a cover letter that accompanies the diskette. False and misleading information that has been certified as accurate and complete may be subject to criminal prosecution. The EPA is investigating the use of electronic signatures to authenticate electronic reporting. The selected security solution will meet the security requirements of the four programs being reviewed.

Appendix A
EPA Form R

This appendix contains EPA Form R.

(IMPORTANT: Type or print; read instructions before completing form)

Form Approved OMB Number: 2070-0093
Approval Expires: 04/2000

EPA
United States Environmental Protection Agency

FORM R

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

WHERE TO SEND COMPLETED FORMS: 1. EPCRA Reporting Center, P.O Box 3348, Merrifield, VA 22116-3348, ATTN: TOXIC CHEMICAL RELEASE INVENTORY 2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

Enter "X" here if this is a revision ☐

For EPA use only

Important: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? ☐ Yes (Answer question 2.2; Attach substantiation forms) ☐ No (Do not answer 2.2; Go to Section 3)

2.2 Is this copy ☐ Sanitized ☐ Unsanitized (Answer only if "YES" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:

SECTION 4. FACILITY IDENTIFICATION

4.1 TRI Facility ID Number

Facility or Establishment Name	Facility or Establishment Name or Mailing Address(if different from street address)
Street	Mailing Address
City/County/State/Zip Code	City/County/State/Zip Code

4.2 This report contains information for: (Important : check a or b; check c if applicable) a. ☐ An entire facility b. ☐ Part of a facility c. ☐ A Federal facility

4.3 Technical Contact Name — Telephone Number (include area code)

4.4 Public Contact Name — Telephone Number (include area code)

4.5 SIC Code (s) (4 digits): a. b. c. d. e. f.

4.6

Latitude	Degrees	Minutes	Seconds	Longitude	Degrees	Minutes	Seconds

4.7 Dun & Bradstreet Number(s) (9 digits)	4.8 EPA Identification Number (RCRA I.D. No.) (12 characters)	4.9 Facility NPDES Permit Number(s) (9 characters)	4.10 Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)
a.	a.	a.	a.
b.	b.	b.	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1	Name of Parent Company	NA ☐	
5.2	Parent Company's Dun & Bradstreet Number	NA ☐	

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 1. TOXIC CHEMICAL IDENTITY (Important: DO NOT complete this section if you completed Section 2 below.)

1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete **only** if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)

SECTION 2. MIXTURE COMPONENT IDENTITY (Important: DO NOT complete this section if you completed Section 1 above.)

2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY
(Important: Check all that apply.)

3.1 Manufacture the toxic chemical:	3.2 Process the toxic chemical:	3.3 Otherwise use the toxic chemical:
a. ☐ Produce b. ☐ Import		
If produce or import:		
c. ☐ For on-site use/processing	a. ☐ As a reactant	a. ☐ As a chemical processing aid
d. ☐ For sale/distribution	b. ☐ As a formulation component	b. ☐ As a manufacturing aid
e. ☐ As a byproduct	c. ☐ As an article component	c. ☐ Ancillary or other use
f. ☐ As an impurity	d. ☐ Repackaging	

SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ONSITE AT ANY TIME DURING THE CALENDAR YEAR

4.1	☐ (Enter two-digit code from instruction package.)	

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE

			A. Total Release (pounds/year) (Enter range code or estimate*)	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1	Fugitive or non-point air emissions	NA ☐			
5.2	Stack or point air emissions	NA ☐			
5.3	Discharges to receiving streams or water bodies (enter one name per box)				
	Stream or Water Body Name				
5.3.1					
5.3.2					
5.3.3					
5.4.1	Underground Injection onsite to Class I Wells	NA ☐			
5.4.2	Underground Injection onsite to Class II-V Wells	NA ☐			

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box ☐ and indicate the Part II, Section 5.3 page number in this box. ☐ (example: 1,2,3, etc)

EPA form 9350-1(Rev. 04/97) - Previous editions are obsolete.

* Range Codes: A= 1 - 10 pounds; B= 11- 499 pounds; C= 500 - 999 pounds.

EPA FORM R PART II. CHEMICAL - SPECIFIC INFORMATION (CONTINUED)	TRI Facility ID Number Toxic Chemical, Category, or Generic Name

SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM ONSITE (Continued)

		NA	A. Total Release (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)
5.5	Disposal to land onsite			
5.5.1A	RCRA Subtitle C landfills	☐		
5.5.1B	Other landfills	☐		
5.5.2	Land treatment/application farming	☐		
5.5.3	Surface Impoundment	☐		
5.5.4	Other disposal	☐		

SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS

6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)

6.1.A Total Quantity Transferred to POTWs and Basis of Estimate

6.1.A.1. Total Transfers (pounds/year) (enter range code* or estimate)	6.1.A.2 Basis of Estimate (enter code)

6.1.B. __	POTW Name						
POTW Address							
City		State		County		Zip	
6.1.B. __	POTW Name						
POTW Address							
City		State		County		Zip	

If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box ☐ and indicate the Part II, Section 6.1 page number in this box ☐ (example: 1,2,3, etc.)

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS

6.2. __ Off-Site EPA Identification Number (RCRA ID No.)							
Off-Site Location Name							
Off-Site Address							
City		State		County		Zip	

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

EPA Form 9350-1 (Rev.04/97) - Previous editions are obsolete.

* Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

EPA FORM R

PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS (Continued)

A. Total Transfers (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

6.2. __ Off-Site EPA Identification Number (RCRA ID No.)

Off-Site location Name

Off-Site Address

City | State | County | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

A. Total Transfers (pounds/year) (enter range code* or estimate)	B. Basis of Estimate (enter code)	C. Type of Waste Treatment/Disposal/ Recycling/Energy Recovery (enter code)
1.	1.	1. M
2.	2.	2. M
3.	3.	3. M
4.	4.	4. M

SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY

☐ Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.

a. General Waste Stream (enter code)	b. Waste Treatment Method(s) Sequence [enter 3-character code(s)]								c. Range of Influent Concentration	d. Waste Treatment Efficiency Estimate	e. Based on Operating Data ?
7A.1a	7A.1b	1		2		3		4	7A.1c	7A.1d	7A.1e
	5		6		7		8			%	Yes ☐ No ☐
7A.2a	7A.2b	1		2		3		4	7A.2c	7A.2d	7A.2e
	5		6		7		8			%	Yes ☐ No ☐
7A.3a	7A.3b	1		2		3		4	7A.3c	7A.3d	7A.3e
	5		6		7		8			%	Yes ☐ No ☐
7A.4a	7A.4b	1		2		3		4	7A.4c	7A.4d	7A.4e
	5		6		7		8			%	Yes ☐ No ☐
7A.5a	7A.5b	1		2		3		4	7A.5c	7A.5d	7A.5e
	5		6		7		8			%	Yes ☐ No ☐

If additional pages of Part II, Section 6.2/7A are attached, indicate the total number of pages in this box ☐ and indicate the Part II, Section 6.2/7A page number in this box : ☐ (example: 1,2,3, etc)

EPA Form 9350-1 (Rev. 04/97) - Previous editions are obsolete.

* Range Codes: A = 1 - 10 pounds; B = 11 - 499 pounds; C = 500 - 999 pounds.

EPA FORM R
PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)

TRI Facility ID Number

Toxic Chemical, Category or Generic Name

SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES

☐ Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.

Energy Recovery Methods [enter 3-character code(s)]

1 ☐ 2 ☐ 3 ☐ 4 ☐

SECTION 7C. ON-SITE RECYCLING PROCESSES

☐ Not Applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.

Recycling Methods [enter 3-character code(s)]

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐

6. ☐ 7. ☐ 8. ☐ 9. ☐ 10. ☐

SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES

		Column A Prior Year (pounds/year)	Column B Current Reporting Year (pounds/year)	Column C Following Year (pounds/year)	Column D Second Following Year (pounds/year)
8.1	Quantity released **				
8.2	Quantity used for energy recovery onsite				
8.3	Quantity used for energy recovery offsite				
8.4	Quantity recycled onsite				
8.5	Quantity recycled offsite				
8.6	Quantity treated onsite				
8.7	Quantity treated offsite				
8.8	Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)				
8.9	Production ratio or activity index				

8.10 Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11.

	Source Reduction Activities [enter code(s)]	Methods to Identify Activity (enter codes)		
8.10.1		a.	b.	c.
8.10.2		a.	b.	c.
8.10.3		a.	b.	c.
8.10.4		a.	b.	c.

8.11 Is additional information on source reduction, recycling, or pollution control activities included with this report ? (Check one box) YES ☐ NO ☐

** Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated onsite or offsite.

Appendix B
EPA Form A

This appendix contains EPA Form A.

(IMPORTANT: Type or print; read instructions before completing form) Form Approved OMB Number: 2070-0143 **Page 1 of ___**

United States Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY
FORM A

WHERE TO SEND COMPLETED FORMS: 1. EPCRA Reporting Center, P.O Box 3348, Merrifield, VA 22116-3348, ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See instructions in Appendix F)

Enter "X" here if this is a revision ☐

For EPA use only

Important: See instructions to determine when "Not Applicable (NA)" boxes should be checked.

PART I. FACILITY IDENTIFICATION INFORMATION

SECTION 1. REPORTING YEAR _____

SECTION 2. TRADE SECRET INFORMATION

2.1 Are you claiming the toxic chemical identified on page 2 trade secret? ☐ Yes (Answer question 2.2; Attach substantiation forms) ☐ No (Do not answer 2.2; Go to Section 3)

2.2 Is this copy ☐ Sanitized ☐ Unsanitized (Answer only if "YES" in 2.1)

SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)

I hereby certify that to the best of my knowledge and belief, for each toxic chemical listed in the statement, the annual reportable amount as defined in 40 CFR 372.27 (a), did not exceed 500 pounds for this reporting year and that the chemical was manufactured, processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year.

Name and official title of owner/operator or senior management official:	Signature:	Date Signed:

SECTION 4. FACILITY IDENTIFICATION

4.1 TRI Facility ID Number

Facility or Establishment Name	Facility or Establishment Name or Mailing Address(if different from street address)
Street	Mailing Address
City/County/State/Zip Code	City/County/State/Zip Code

4.2 This report contains information for: (Important : check c if applicable) c. ☐ A Federal facility

4.3 Technical Contact Name ____ Telephone Number (include area code) ____

4.4 Intentionally left blank

4.5 SIC Code (s) (4 digits)	a.	b.	c.	d.	e.	f.

4.6	Latitude	Degrees	Minutes	Seconds	Longitude	Degrees	Minutes	Seconds

4.7 Dun & Bradstreet Number(s) (9 digits)	4.8 EPA Identification Number (RCRA I.D. No.) (12 characters)	4.9 Facility NPDES Permit Number(s) (9 characters)	4.10 Underground Injection Well Code (UIC) I.D. Number(s) (12 digits)
a.	a.	a.	a.
b.	b.	b.	b.

SECTION 5. PARENT COMPANY INFORMATION

5.1 Name of Parent Company NA ☐

5.2 Parent Company's Dun & Bradstreet Number NA ☐

EPA Form 9350-2

IMPORTANT: Type or print; read instructions before completing form

Page ___ of ___

EPA FORM A

PART II. CHEMICAL IDENTIFICATION **TRIFID:**

SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive).
SECTION 2. MIXTURE COMPONENT IDENTITY	**(Important: DO NOT complete this section if you completed Section 1 above.)**
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive).
SECTION 2. MIXTURE COMPONENT IDENTITY	**(Important: DO NOT complete this section if you completed Section 1 above.)**
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive).
SECTION 2. MIXTURE COMPONENT IDENTITY	**(Important: DO NOT complete this section if you completed Section 1 above.)**
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

SECTION 1. TOXIC CHEMICAL IDENTITY	**Report ___ of ___**
1.1	CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)
1.2	Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)
1.3	Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic Name must be structurally descriptive).
SECTION 2. MIXTURE COMPONENT IDENTITY	**(Important: DO NOT complete this section if you completed Section 1 above.)**
2.1	Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

EPA Form 9350-2

(Make additional copies of this page, if needed)

Appendix C
Submission Tracking Numbers

The mail preparation activities enable the records management system (RMS) to link original submissions with tracking numbers. The tracking numbers convey information on the status of submission processing and physical storage location. The tracking system is based on an alphanumeric system that is tracked in the RMS module of the TRIM system.

All submissions receive multiple tracking numbers, which are generically called file numbers (FNs). A file number is a system-generated, 15-character alphanumeric identifier (barcode label). FNs track the submission throughout the stages of processing and from physical and electronic storage. This tracking includes submissions that are physically boxed and transferred to the FRC, where a range of file numbers is associated with a box number, specifically envelope numbers (ENs).

The RMS module tracks six types of file numbers: EN, submission (SU) number, diskette (DD) number, diskette folder (DF) number, other document (OT) number, and DCN.

- *EN.* All envelopes received at the EPCRA Reporting Center are assigned an EN, which is applied on the outside of the envelope. The system links the received and postmark dates to the EN. An EN tracking number can be associated with several facilities.

- *SU.* All paper Forms R and A receive an SU tracking number. Standard TRI data have two types of SUs, trade secret SU and non-trade secret SU. An SU tracking number can be associated with multiple chemicals.

- *DD and DF.* Only diskette Form R and A submissions receive a DD tracking number. The accompanying cover letter is assigned a DF tracking number. Unlike other file number labels, the DD and DF constitute a single label.

- *OT.* All miscellaneous items are assigned an OT tracking number. OT is a category for miscellaneous items, including e-mail, facsimile, and printed letters. Miscellaneous items include several facility-related issues, such as a submission withdrawal request or a change in the owner of a facility.

- *DCN.* A DCN is assigned to each reported chemical. At least three elements—form type, reporting year, and form expiration date—are needed before a DCN can be attached. Multiple DCNs can be attached to an SU.

Appendix D
Facility Data Elements

Table D-1 lists facility data elements that are captured in the TRIM database.

Table D-1. Facility Data Elements

No.	Data name
1	Name
2	Mailing name
3	Street address
4	City
5	County
6	State
7	Zip code
8	Zip code + 4
9	Country
10	Technical contact name
11	Technical contact phone, public contact phone number
12	Phone extension
13	Latitude degrees, longitude degrees
14	Latitude minutes, latitude seconds; longitude minutes, longitude seconds
15	Name of parent company, submitted parent company Dun & Bradstreet number
16	Standard Industrial Classification
17	Dun & Bradstreet number
18	EPA identification number (RCRA identification number)
19	NPDES permit number
20	Underground injection well code (UIC)

Appendix E
Data Verification Table

Table E-1 is an example of information displayed on the data verification screen. For each data field, "old" and "new" data are presented for comparison. A third column documents new data that are accepted. In this example, new fugitive release and Public Owned Treatment Works (POTW) transfer values are accepted. In addition, double-keyed data from a randomly selected data field are also accepted.

Table E-1. Data Verification Screen

No.	Data field	Old	New	Accept
1	Number of pages in submission	5	5	
2	Facility type	F	F	
3	Trade secret	N	N	
4	Sanitization	N	N	
5	CAS number	N100	N100	
6	Chemical name	Kryptonite	Kryptonite	
7	Generic chemical name			
8	Fugitive release	100	1000	1000
9	Stack release	50	50	
10	Stream release (prompt for additional iterations)	780	780	
11	Class I wells release			
12	Class II to V wells release			
13	RCRA landfill release	8	8	
14	Other landfills release			
15	Land treatment release			
16	Surface impoundment release			
17	Other disposal release			
18	POTW transfer	500	550	550
19	Offsite transfer (prompt for additional iterations)			
20	Source reduction—quantity released	N/A	N/A	
21	Source reduction—quantity for onsite energy recovery	N/A	N/A	
22	Source reduction—quantity for offsite energy recovery	N/A	N/A	
23	Source reduction—quantity recycled onsite	N/A	N/A	
24	Source reduction—quantity recycled offsite	N/A	N/A	
25	Source reduction—quantity treated onsite	N/A	N/A	
26	Source reduction—quantity treated offsite	N/A	N/A	

Table E-1. Data Verification Screen (Continued)

No.	Data field	Old	New	Accept
27	Remedial action, quantity release	N/A	N/A	
28	Randomly selected field	U	X	
29	Randomly selected field	V	Y	
30	Randomly selected field	W	Q	W
31	Randomly selected field	X	X	
32	Randomly selected field	Y	Y	
33	Randomly selected field	Z	Z	

N/A = not applicable.

Appendix F
Output Files and Format

The unified file format is used for records uploaded to the EPA intranet and Internet sites and for data products and extracts provided to the GPO, NLM, and RTK NET. The file format for the TRIM system is unknown. This appendix presents the unified file format for the TRIS.[1]

The record formats are a flat file representation of the data extracted from the TRIM database. The field description includes a field definition, format, length, starting position, and ending position. The following eight unified file format files are used:

- *NAMADD*. TRI facility identification; historical record of TRI facility identification; state and EPA region where the facility is located; if facility has reported being closed; type of facility (e.g., commercial; federal; government-owned, contractor-operated [GOCO]); agency and facility name; facility street, city, county and zip code; parent company name and Dun & Bradstreet number; EPA identification number if reported; SIC code; state and county Federal Information Processing Standards code; mailing name and address; update date; and latitude and longitude.

- *NAMADD-History*. TRI facility identification; reason for changing facility information; update date; reporting year; EPA region where the facility is located; if facility has reported being closed; type of facility (e.g., commercial, federal, GOCO); agency; parent company Dun & Bradstreet number; and facility name, street, city, county, and zip code.

- *Submission*. Identifier assigned to each submission (i.e., FN); TRI facility identification; version of Form R submitted (1989 through 1997); reporting year; chemical or chemical category submission if a trade secret; submission for partial or entire facility (blank if no response), submission status (e.g., full submission, changed submission, submission with errors, validated submission); certifying signature provided (e.g., original, copy, not provided); maximum quantity of chemical during calendar year; identifier assigned to a chemical by CAS number; name of chemical or chemical category; certification name; title of official certifying the submission; date signed; technical contact name and phone number; public contact name and phone number; UIC identification numbers; mixture component identity or trade name product; waste minimization index (reporting year production, year production before waste minimization); waste

[1] EPCRA Reporting Center, *Toxic Chemical Release Inventory System (TRIS) Unified File Format (ADOBES) File Specifications – Final Draft*, January 7, 1999.

minimization action code; waste minimization action code (type of waste minimization activity); waste minimization current-year quantity; waste minimization prior-year quantity; waste minimization percent change (in weight, percent destroyed or converted); update date; receipt date; multiple submissions (for the facility, year, and chemical); date declassifying chemical from trade secret to non-trade secret; current and previous year quantity of chemical exiting recycling process; quantity of chemical expected to exit recycling process in following 2 years; quantity of chemical sent offsite for recycling in current and previous years; quantity of chemical expected to be sent offsite for recycling in following 2 years; quantity of chemical entering energy recovery onsite in current and previous years; quantity of chemical expected to enter energy recovery onsite in following 2 years; quantity of chemical sent offsite for energy recovery in current and previous years; quantity of chemical expected to be sent offsite for energy recovery in following 2 years; quantity of chemical entering treatment onsite in current and previous years; quantity of chemical expected to enter treatment onsite in following 2 years; quantity of chemical sent offsite for treatment in current and previous years; quantity of chemical expected to be sent offsite for treatment in following 2 years; quantity of chemical released into the environment in current and previous years; quantity of chemical estimated to be released into the environment in following 2 years; quantity of chemical released to the environment in the current year as a result of remedial actions or one-time events not associated with production; recycling activity index (ratio of reporting year production to year production before recycling); additional data on source reduction; recycling or pollution control activities; EPA identification numbers; Dun & Bradstreet numbers; SIC codes; NPDES permit number; activity use codes (for chemical at the facility); multi-submission identifier; energy onsite process codes; recycled onsite process codes; federal facility; and form type (Form R or certification statement).

- *Release transfer*. Identifier assigned to each submission (i.e., FN); type of chemical release from the facility to the environment; transfer offsite identifier; EPA identification number for offsite treatment or disposal facility; name, street, city, county, state, zip code, and country of offsite treatment or disposal facility; if offsite treatment and disposal facility is owned or controlled by the facility or parent company; range code (range of amount of toxic chemical released annually); estimate of amount of chemical released annually; method for calculating total release estimate; total quantity (by weight) released to water contributed by storm water runoff; code for surface water body or receiving stream where chemical is directly discharged; name of receiving stream or water body; code for type of underground injection; code identifying the treatment or disposal method; and identification number assigned to the release transfer record.

- *Treatment*. Identifier assigned to each submission (i.e., FN); wastestream code; waste influent code (influent concentration range); waste treatment sequence (sequence steps to estimate treatment efficiency); waste treatment efficiency (estimate of the percentage of toxic chemical removed); estimate based on operating data; sequence number (sequence that treatment records are entered); and treatment methods.

- *Source reduction*. Identifier assigned to each submission (i.e., FN); sequence number (sequence that treatment records are entered); source reduction activity code (method for source reduction); and source reduction method codes (technique to identify the source reduction activities).

- *Table*. Table name, key, and descriptions.

- *Preferred location*. TRI facility identification; EPA's preferred latitude estimation for the reporting facility; preferred longitude; preferred accuracy estimation (in meters); preferred geographic coordinate collection method code; preferred description; preferred geographic coordinate horizontal datum; preferred source map scale; and preferred geographic coordinate quality assurance code.

Appendix G
EPCRA Reporting Center Tasks and Managers

The information contained in Table G-1 was provided by the TRI Information Management Division. The number of full-time employees is based on the *Tasks and Managers* report. Four managers were assigned to each task assignment: one EPA manager, one EPA manager alternate, one EPCRA Reporting Center manager, and one EPCRA Reporting Center manager alternate. In total, 20 managers, 9 EPA managers, and 11 EPCRA Reporting Center managers oversee the administration of the TRI program operations.

Table G-1. Tasks and Managers

Task assignment	Task manager	Alternate	EPCRA Reporting Center manager	Alternate
C1—Program Management and Program Reporting Requirement	EPA Manager 1	EPA Manager 2	TRI Manager 1	TRI Manager 11
C2—Program Workplan Development	EPA Manager 1	EPA Manager 2	TRI Manager 1	TRI Manager 11
E1—Hardware Acquisition, Installation, and Maintenance	EPA Manager 2	EPA Manager 1	TRI Manager 2	TRI Manager 11
E2—Software Enhancement and Maintenance	EPA Manager 2	EPA Manager 5	TRI Manager 3	TRI Manager 6
E3—Operational Systems Support	EPA Manager 2	EPA Manager 5	TRI Manager 2	TRI Manager 11
E4—Develop, Maintain, and Enhance Magnetic Media Software	EPA Manager 3	EPA Manager 4	TRI Manager 4	TRI Manager 11
E4A—TRI Electronic Reporting	EPA Manager 4	EPA Manager 1	TRI Manager 1	TRI Manager 11
E5—Testing (Software and Documentation)	EPA Manager 5	EPA Manager 2	TRI Manager 3	TRI Manager 11
E6—User Support	EPA Manager 2	EPA Manager 5	TRI Manager 3	TRI Manager 11
E7—Training	EPA Manager 2	EPA Manager 4	TRI Manager 11	TRI Manager 11
E8—EPA Systems Integration and Standardization	EPA Manager 4	EPA Manager 2	TRI Manager 4	TRI Manager 7
E9—Change Control	EPA Manager 4	EPA Manager 2	TRI Manager 3	TRI Manager 8
E10—Document Receipt and Identification	EPA Manager 6	EPA Manager 7	TRI Manager 5	TRI Manager 9

Table G-1. Tasks and Managers (Continued)

Task assignment	Task manager	Alternate	EPCRA Reporting Center manager	Alternate
E11—Data Entry	EPA Manager 7	EPA Manager 6	TRI Manager 5	TRI Manager 10
D12—Error Notices and Other Mail Outs	EPA Manager 6	EPA Manager 7	TRI Manager 10	TRI Manager 5
E12A—Enforcement and Compliance Notices	EPA Manager 6	EPA Manager 7	TRI Manager 10	TRI Manager 5
E13—Data Reconciliation	EPA Manager 6	EPA Manager 7	TRI Manager 10	TRI Manager 5
E14—Document Storage (Temporary and Permanent)	EPA Manager 7	EPA Manager 6	TRI Manager 5	TRI Manager 9
E15—Retrieval and Searching	EPA Manager 7	EPA Manager 6	TRI Manager 5	TRI Manager 10
E16—Image Processing	EPA Manager 7	EPA Manager 6	TRI Manager 5	TRI Manager 5
E17—303, 311, 312, 313 Submissions	EPA Manager 8	EPA Manager 7	TRI Manager 5	TRI Manager 9
E18—Procedure Development	EPA Manager 1	EPA Manager 9	TRI Manager 1	TRI Manager 11
E19—Quality Assurance	EPA Manager 6	EPA Manager 1	TRI Manager 10	TRI Manager 11

Appendix H
Abbreviations

AFR	Automated Form R
AIRS	Aerometric Information Retrieval System
ALF	Automated Ledger Function
ATRS	Automated TRI Reporting Software
CAS	Chemical Abstract Service
CD-ROM	compact disk–read-only memory
CR	central receiving
DCN	distinct chemical number
DD	diskette number
DF	diskette folder
EAD	Environmental Assistance Division
EC	electronic commerce
EDI	electronic data interchange
EN	envelope number
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FN	file number
FOIA	Freedom of Information Act
FRC	Federal Records Center
FTE	full-time equivalent

FTTS	FIFRA and TSCA Tracking System
GOCO	government-owned, contractor-operated
GPO	Government Printing Office
ICR	Information Collection Request
ID	identifier
IMB	Information Management Branch
IMD	Information Management Division
LAN	local area network
LMI	Logistics Management Institute
MSDS	material safety data sheet
N/A	not applicable
NA	not applicable
NCDB	National Compliance Database
NDC	Notice of Data Change
NET	National Emissions Trends
NLM	National Library of Medicine
NON	Notice of Noncompliance
NOSE	Notice of Significant Error
NOTE	Notice of Technical Error
NPDES	National Pollutant Discharge Elimination System
OECA	Office of Enforcement and Compliance Assurance
OPPT	Office of Pollution Prevention and Toxics
OSWER	Office of Solid Waste and Emergency Response
OT	other documents
PC	personal computer

POTW	Public Owned Treatment Works
PPA	Pollution Prevention Act
RCRA	Resource Conservation and Recovery Act
RMS	Records Management System
RTK NET	Right-to-Know Network
RVR	Release Value Report
SIC	Standard Industrial Classification
SU	submission
TRI	Toxic Release Inventory
TRIFID	TRI Facility Identification Number
TRIM	Toxic Release Inventory Modernization
TRIS	Toxic Release Inventory System
TSCA	Toxic Substances Control Act
UIC	underground injection code

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The U.S. Environmental Protection Agency (EPA) seeks to improve its operating procedures and reduce the reporting burden of the regulated community. The EPA is committed to implementing electronic reporting mechanisms, including electronic commerce (EC), electronic data interchange (EDI), Web-based forms, and other technologies, as a means of streamlining compliance reporting. By using EC and EDI , reporting organization s, state and local environmental agencies, and the EPA can reduce the costs of compliance reporting, improve data quality, integrate the data across systems, improve data access, and eliminate processing delays.

This report documents the current business process analysis for the Toxic Release Inventory program. This analysis will provide the framework for the Central Receiving model in the "To Be" environment.

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